

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER

Published by The Miller Publishing Co., Minneapolis, Minn.

Vol. 5

D Accepted as Controlled Circulation
Publication at Minneapolis, Minn.

MARCH 31, 1958

Subscription Rates:
\$5 for 1 year, \$9 for 2 years

No. 13

Potash Industry Calls Anti-Dumping Act Ineffective

Bill Fails to Define
Meaning of Injury
To Domestic Firms

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON — Congressional proposals to amend the Anti-Dumping Act as proposed in S.6006 came under critical attention of the potash producers of the U.S. last week when its spokesman, Rufus G. Poole, cited to the Senate Finance Committee the vagueness of the act and the disconnected administrative techniques which prevented any satisfactory operation of the existing law or even under the amending procedure now pending before Congress.

The target of Mr. Poole's criticism was the absence of any clear avenue of relief from dumping of commodities by foreign exporters of potash on U.S. industry.

Relief, according to the Poole statement, is an elusive matter. First, he cited, it is necessary for local industry to show that merchandise is being sold in the U.S. at prices less than

(Continued on page 5)

Davison Adds to Facilities at Bartow Triple Super Plant

BARTOW, FLA.—Addition of facilities costing nearly \$1,500,000 now enables the Bartow, Fla., triple superphosphate plant of the Davison Chemical Co. Division of W. R. Grace & Co. to produce run-of-pile triple superphosphate, a powder form, as an addition to the granulated material previously turned out, it was announced March 23 by the company.

The company said it is giving special attention to maintaining high phosphorus pentoxide content—46.48% available phosphoric acid. Both processing and storage facilities were added to the Bartow plant. To obtain the new product, the strength of phosphoric acid produced there is raised by evaporation to more than 54% P₂O₅ from the 39% used for the granulated material, the firm said.

This acid is combined with ground phosphate rock in a TVA type cone mixer and the resulting slurry is solidified on a setting belt. After curing in the storage plant, the product is milled and screened prior to shipment.

The additional process does not raise the over-all production total of the plant, which was originally rated at 200,000 tons annually of triple superphosphate, a figure which has been considerably exceeded in operation.

North Central ESA Studies Cereal, Forage Crop Insect Control

By LAWRENCE A. LONG

Editor of CropLife

ST. LOUIS—Discussions centering around control of insect pests of forest and shade trees, cereal and forage crops, truck crops and fruit were featured during the first sessions of the three-day meeting of the North Central Branch Entomological Society of America, held at the Sheraton-Jefferson Hotel here. Some 300 persons representing the pesticide formulation trade, suppliers and state and federal entomologists registered the

first day of the convention March 26. It was the 13th annual conference of the group.

Donald A. Wilbur, Kansas State College entomologist and chairman of the North Central Branch, presided at the opening session, which featured a talk by Dr. Robert L. Metcalf, University of California, president of the Entomological Society of America, and reports by two entomologists who had attended the International Congress of Crop Protection at Hamburg, Germany, recently.

Dr. John Lilly, Iowa State College, showed slides of conference scenes in Germany and outlined the meeting agenda.

Randall Latta, U.S. Department of Agriculture, Beltsville, Md., described problems experienced in northern Germany in grain storage sanitation and told about research being undertaken in England in connection with stored products and insect control.

An afternoon session on cereal and forage crops attracted an overflow crowd, with speakers covering a wide range of discussions on pest control in corn, meadows and sorghum.

Glenn D. Moore, Northrup, King & Co., Minneapolis, outlined some of the problems confronting seed firms in control of insects attacking field

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RESEARCH CAMPAIGN HIGHLIGHTS

New Chemicals, Diseases, Farm Practices Show Promise In Control of Pink Bollworm

WASHINGTON — Six chemical compounds, several bacteria and fungi, a nematode and various cotton-growing practices are due for closer study this year as possible weapons against the pink bollworm, the U.S. Department of Agriculture says. Attempts to colonize insect enemies of this formidable cotton pest have been abandoned, and a continuing search for attractants and repellents has so far been fruitless, USDA says.

These are highlights of one of the most intensive research campaigns ever waged against an insect pest. The state-USDA-industry program is

spearheaded by scientists of USDA's pink bollworm research laboratory at Brownsville, Texas. Dr. Dial F. Martin heads the work for USDA's Agricultural Research Service. It uses the knowledge not only of entomologists but also of plant breeders, chemists and engineers—the modern team approach to pest problems.

Six of 31 chemical compounds laboratory-tested last year will be further field tested in 1958 in the search for more effective and economical insecticides against the bollworm.

Sevin, an insecticide first field-tested in Texas and Mexico last year, gave outstanding control of both the pink bollworm and the boll weevil, and looks promising against several other cotton pests, according to USDA. Enough of this chemical will be available this year for large-scale testing. Entomologists hope later to be able to recommend it, in addition to the now-recommended DDT and Guthion, for pink-bollworm control. Costwise, DDT continues to be the most satisfactory insecticide for use against this pest, USDA says.

Six species of fungi and one of

(Continued on page 20)

Allied Chemical & Dye To Get New Name

NEW YORK—Allied Chemical & Dye Corp. is about to change its name to Allied Chemical Corp. The recommendation will require approval of holders of a majority of outstanding stock, and, if accepted, will become effective by May 1.

Glen B. Miller, president of the firm, said that "the board of directors believes that the proposed new name will more clearly reflect the broad nature of the company's position in the chemical industry and will not single out a particular division or field of activity."

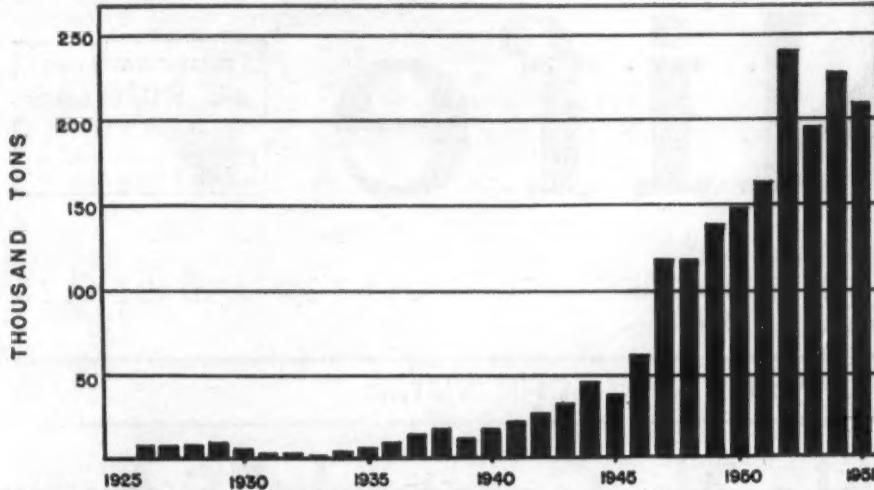
Following are the intended 1958 planting figures for some of the major crops as they now look to the Crop Reporting Board: corn, 75.1 million acres, up 1% from last year, but 9% below average; wheat, winter and spring, 56.5 million acres, up 6.6% from 1957; oats, 39.7 million acres, 8% under 1957 and 10% below average; barley, 16 million acres, down 3% from last season but 29% above average;

Rice, 1.46 million acres, up 6% from last year but 25% below average; sorghums for all purposes, 23.5 million acres, 13% less than last year's record high but 48% above average; hay, 72.5 million acres in

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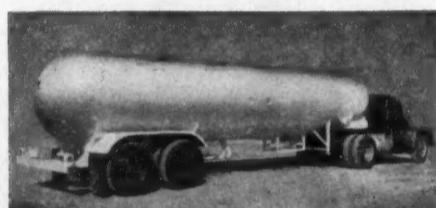


FERTILIZER USE EXPANDS—The manifold increase in use of fertilizers in Kansas since 1925 is shown in the graph above. After dwindling to an almost non-existent low in the thirties, consumption began a climb which reached a peak in 1952 and has remained high since. The amount of fertilizer used was very small until World War II, but the increase after the war was so rapid that consumption in 1950 was nearly 4½ times that applied in 1945. Principal crops fertilized have been wheat, corn, oats, and alfalfa, according to information contained in bulletin 392 issued by Kansas State College. The chart is from this bulletin.

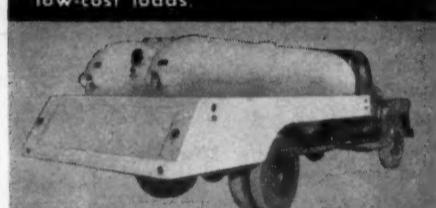
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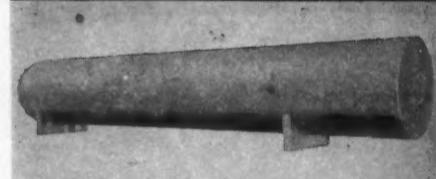
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How to Market New Fly Control Chemical

MIDLAND, MICH.—Dow Chemical Co. has announced that its new fly control chemical, Korlan, will appear on the market this spring. Dow said that the new material combines good residual properties with very low toxicity to warm-blooded animals and that it is recommended for use in dairy barns, poultry houses, other animal shelters, general farm buildings and in refuse areas.

Korlan will be available in 25% wettable powder and 12% emulsifiable formulations. The powder will be packaged in half pound and four pound sizes and the liquid in pints and gallons. The small size in either formulation will make one and a half gallons of spray—enough to cover 1,500 square feet of area, Dow said.

REPORT ON RESEARCH

BERKELEY, CAL.—The control of insects and their attacks on crops came in for some heavy study by University of California researchers during 1957. Some 18 reports were published on such subjects as the artichoke plume moth, new anti-insect spray materials, the lygus bug, and others. Almost as many studies—17 in all—were published on treatment of the soil either to combat insects or to improve its rate of plant production.



TEXAS CONFERENCE SPEAKERS—Shown above are speakers at the recent agricultural chemicals conference held at Texas Technological College in Lubbock, Texas. From left to right are Dr. H. A. Johnston, American Cotton Council research director from Memphis, Tenn.; Dr. Burnett Truchelut, Dow Chemical Co. research and development physiologist from Lake Jackson, Texas; J. C. Porter, Wichita Falls, Texas, banker; Howard Gault, Hereford, Texas, ag chemicals dealer, and Dr. Alan Weise of the Southwestern Great Plains Field Station at Bushland, Texas. A story about the conference appeared on page 8 of the March 24 issue of Croplife.

More Production on Fewer Acres Could Save Tennessee Farmers \$44.8 Million

KNOXVILLE—Tennessee farmers could save \$44,849,000 by increasing production with fewer acres, within five years.

This was the consensus of opinion resulting from a series of soil fertility meetings held in 95 Tennessee counties. According to Joseph N. Matthews, assistant agronomist, University of Tennessee Agricultural Extension Service, the soil fertility meetings were attended by agricultural workers, credit men, farm organization leaders, local fertilizer and seed dealers, machinery and hardware dealers and others concerned with servicing farmers.

The leaders attending these meetings considered the present production figures for each county and studied methods of reducing costs of production. It was pointed out that this could be done by increasing production per acre with fewer acres of each crop.

Each county group decided what the average production per acre for each crop could be within five years. The state average for corn would be increased from the past five year average of 28 bu. per acre to 43 bu. per acre, cotton from 425

lb. to 608 lb. per acre, burley tobacco from 1,521 lb. to 1,809 lb. per acre, dark-fired tobacco from 1,331 lb. to 1,729 lb. per acre, wheat from 16 bu. to 25 bu. per acre, other small grains from 27 bu. to 44 bu. per acre.

Based on known costs of production per unit at the different production rates, these increases would save the farmers of Tennessee \$44,849,000 each year. It was the general feeling of those in attendance that this efficiency of production is necessary to maintain a profitable farm business.

One way of increasing the efficiency of farming is through soil testing, Mr. Matthews says. These groups set a goal of 39,000 soil samples in 1958 to move in the direction of more efficient farming.

William L. Hunter, California Official, Dies

SACRAMENTO—William L. Hunter, 49, chief of the Bureau of Field Crops, California Department of Agriculture, and past president of the Association of American Feed Control Officials, died suddenly at his home here March 16. Death was attributed to a heart attack.

Mr. Hunter had been an employee of the California Department of Agriculture since Jan. 27, 1936 when he became a junior cereal chemist in the Bureau's Feed Control laboratory. He advanced to senior cereal chemist Oct. 1, 1937, and to supervising feed chemist on Sept. 1, 1944. He became assistant chief of the Bureau of Field Crops July 1, 1950, and chief on Feb. 1, 1957.

Mr. Hunter was chairman of the committee on medicated feed labeling of the Association of American Feed Control Officials. He also was a member of the American Chemical Society, Animal Nutrition Research Council, Association of Official Agricultural Chemists and American Society for Public Administration.

Clemson Leaflet

CLEMSON, S.C.—A leaflet, "Analyses of Fertilizer Materials," showing primary, secondary, and minor elements of the fertilizer materials most widely used in South Carolina, is being distributed by the Clemson extension service.

WAREHOUSE BURNS

CLEVELAND—Fire recently destroyed a new warehouse of the Broadway Supply Co. here, with loss estimated at \$400,000. Nearly 400 tons of fertilizer were destroyed.

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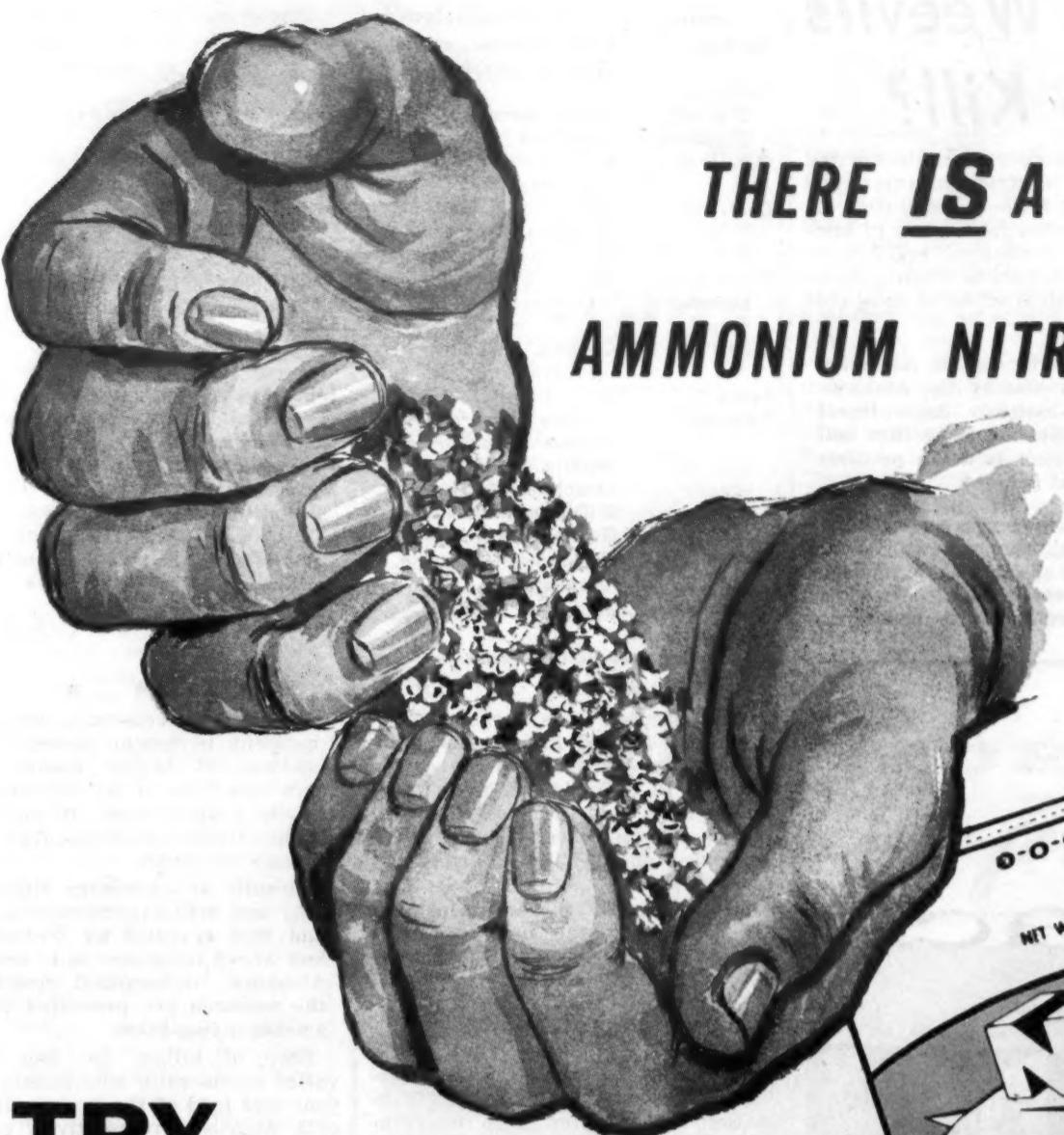
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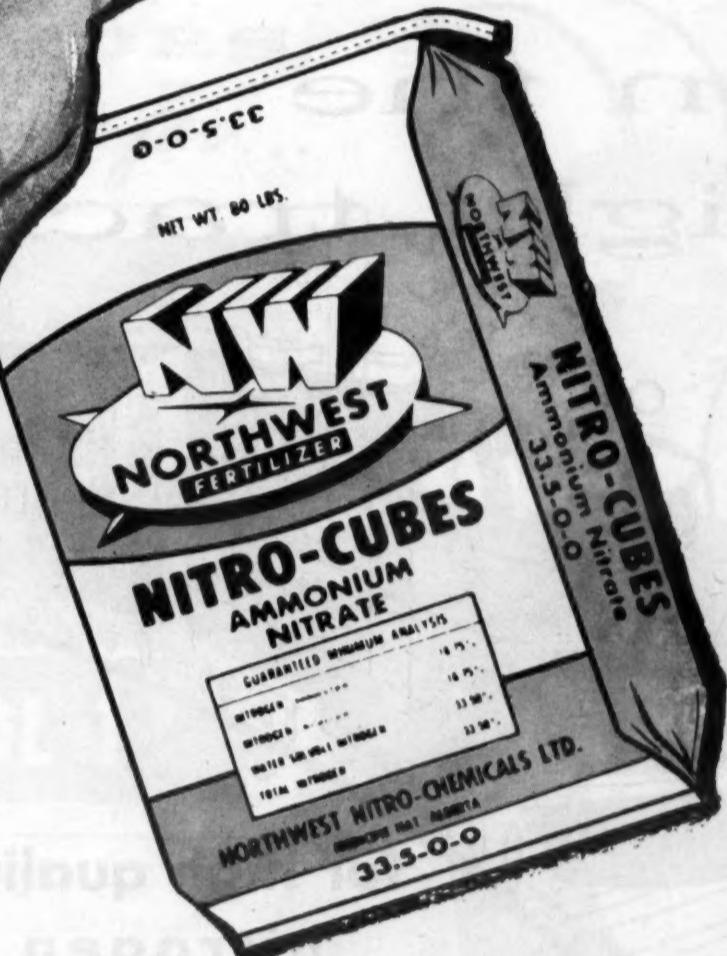
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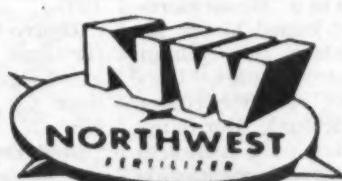
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Are Alabama Boll Weevils Getting Harder to Kill?

By F. S. ARANT and
GLENN F. BURKHALTER*

Don't be panicked by tales about boll weevil resistance. Instead, learn the facts about this problem.

Resistance to insecticides means that a strain of insects can withstand larger doses of an insecticide than is needed to kill others of the same species. This resistance is transmitted to subsequent generations. Small variations in susceptibility caused by season, field conditions, and factors other than inheritance are not considered resistance.

*This article is reprinted from the Spring, 1958, issue of "Highlights of Agricultural Research," published by the Agricultural Experiment Station, Alabama Polytechnic Institute. The authors are members of the API department of zoology-entomology.

Boll weevil resistance to chlorinated hydrocarbon insecticides (materials generally used for boll weevil control) has been reported from parts of Louisiana, Texas, Mississippi, and Arkansas. However, the areas involved make up only a small fraction of total cotton acreage.

This is not the case in Alabama. Results of studies by the Alabama Polytechnic Institute Agricultural Experiment Station show that boll weevil resistance is not a problem in the state at present.

Research has been conducted in Alabama during the past two years to determine the susceptibility or resistance of boll weevils to chlorinated hydrocarbon insecticides. In most of the

Susceptibility of Strains of Boll Weevil to Insecticides

Locality	Insecticides tested	Type of test	Results
Fairhope	BHC (lindane), endrin, Guthion, toxaphene	Laboratory ^{1,2}	Insufficient data on BHC; no resistance to others
Fairhope Station ³ , Courtland	Endrin, Guthion, toxaphene	Laboratory ³	No resistance
Carrollton	BHC (lindane), endrin, toxaphene	Laboratory ³	Insufficient data on BHC; no resistance to others
Deatsville	BHC, endrin, Guthion, malathion, heptachlor, toxaphene	Field	No resistance
Frisco City, Lowndes- boro	Endrin, Guthion, toxaphene	Laboratory ¹	No resistance
Prattville	Guthion, malathion, toxaphene	Field	No resistance
Selma	BHC (lindane)	Laboratory ²	No resistance
Tallassee	Calcium arsenate, endrin, heptachlor, malathion, dieldrin, Guthion, toxaphene	Field on all; laboratory on endrin and toxaphene	No resistance
Auburn	BHC (lindane), endrin, Guthion, toxaphene	Laboratory ^{1,2}	No resistance
Crossville	BHC (lindane), endrin, toxaphene	Laboratory ²	No resistance to BHC; insufficient data on others

¹Individual application

²Mass exposure

³Susceptible weevils from Louisiana



work, measured doses of each insecticide were applied individually to 2-day-old weevils reared from cotton squares. In a few tests, mass techniques were used to expose the weevils to known concentrations of insecticides on the inner surface of glass jars.

More than 35,000 weevils from 12 locations in the state have been tested. Laboratory work was supplemented each year by field experiments at three locations with chlorinated hydrocarbons and organophosphate insecticides.

Susceptible boll weevils were established in 1956 at the Gulf Coast Substation, Fairhope, for use in these studies. These susceptible weevils were compared with weevils from 10 other locations in the state to determine resistance or susceptibility.

In 1956 laboratory experiments, boll weevils collected from Auburn, Courtland, Frisco City and Lowndesboro were all relatively easy to kill with toxaphene and endrin (chlorinated hydrocarbons). At the lower dosage levels tried, weevils from these four localities were slightly harder to kill than those collected at Fairhope in

areas that had received no insecticidal treatment in recent years, if ever. However, at higher dosage levels there was little or no difference. All weevils studied were susceptible to the insecticides and no resistant populations were found.

Results of laboratory studies in 1957 and field experiments in 1956 and 1957 revealed no evidence of boll weevil resistance in 12 areas of Alabama. Summarized results of the research are presented in the accompanying table.

Ease of killing the boll weevil varied considerably with season of the year and food of the insects. In general, weevils were relatively easy to kill during early- and mid-summer while cotton was fruiting freely. Late in the season they were harder to kill. This fact has been known for five or six years.

Although boll weevil resistance was not found to be a problem in Alabama, it may develop as it has in other areas of the Cotton Belt. Until resistance is a factor, the recommended chlorinated hydrocarbon insecticides are still preferred for boll weevil control.

Industry Patents and Trademarks

2,827,368

Non-Burning Plant Fertilizer. Patent issued March 18, 1958, to Everett N. Mortenson, Chicago, and Joseph K. Kealy, Lansing, Ill., assignors to Swift & Co., Chicago. The method of preparing a substantially dry, non-burning fixed fertilizer containing ingredients supplying nitrogen, phosphorus, and potassium in available form which comprises: predetermined the vapor pressure of saturated water solutions of said ingredients; mixing those ingredients having at least about 85 percent of the vapor pressure of pure water when measured at the same temperature in such proportions that the N, P, and K content expressed as N, P₂O₅, and K₂O based on the total weight of the mixed fertilizer is at least about 3 percent each to provide a complete plant food showing substantially no burning when applied to leafy plants in amounts normally used for plant food purposes.

2,827,501

Process of Producing Pure Technical Grade Gamma Hexachloro-Cyclohexane. Patent issued March 18, 1958, to Bruno Walach and Helmut Kudszus, Ingelheim (Rhine), Germany, assignors to C. H. Boehringer Sohn, Ingelheim (Rhine), Germany. Process for producing pure technical grade gamma-benzene hexachloride from a mixture of benzene hexachloride isomers, the gamma isomer being present in a proportion substantially greater than that in crude benzene

hexachloride, and the proportion of delta isomer present being less than that in crude benzene hexachloride which comprises dissolving said mixture in methanol, the boiling point of which is raised above the normal atmospheric boiling point, saturating said solvent with said mixture at a temperature substantially above said normal boiling point, cooling said solution to a temperature at which said gamma isomer crystallizes but at which the other isomers remain in solution, and recovering said gamma isomer from the mother liquor.

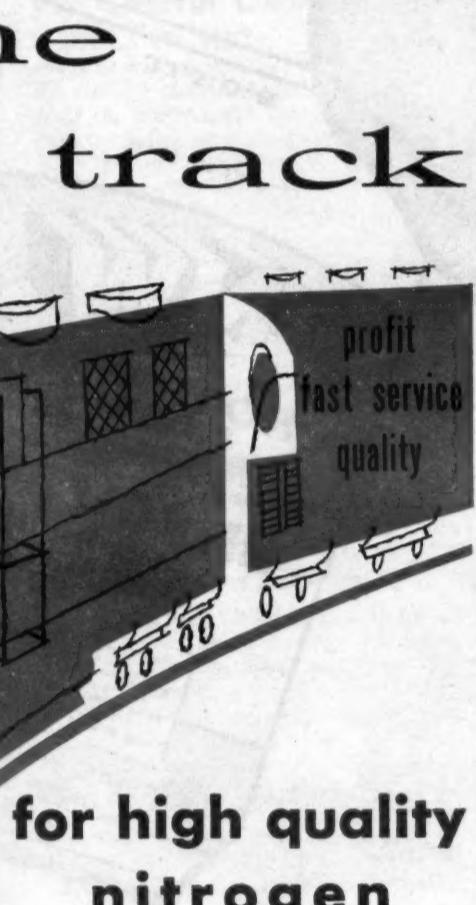
Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notices of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of \$25 must accompany each notice of opposition.

Curb, in capital letters, for insecticide for the control of insects in lawns and flower gardens. Filed April 22, 1957, by Diamond Black Leaf Co., Cleveland, Ohio. First use Feb. 27, 1957.

Hydro-Pak, in capital letters, for fertilizer to be used in fish ponds. Filed Dec. 13, 1956, by Mutual Fertilizer Co., Savannah, Ga. First use Nov. 26, 1956.

Red Devil, with letters in circular design, for liquid fish fertilizer. Filed Aug. 23, 1957, by Arley Cheadle, doing business as Marine Electrolysis Eliminator Co., Seattle, Wash. First use July 23, 1957.



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ANTI-DUMPING ACT

(Continued from page 1)

fair value—in short “dumped prices.” Then the Tariff Commission must find that a domestic industry is being injured or likely to be injured by such sales.

Mr. Poole said that since the act itself and the proposed amendment fail to define injury as a guide to the Tariff Commission, the act is wholly ineffective.

He urged that, in general, injury to a domestic industry be measured by loss of sales of a product or commodity.

The split responsibility between the Treasury Dept. and the Tariff Commission is seen as little more than a manufactured type of administrative schizophrenia, the potash industry attorney stated. In the first instance, the Treasury Dept. initiates action with a finding that imported merchandise is being sold in the U.S. at less than fair value. In the second instance, it is the responsibility of the Tariff Commission to make a finding that domestic industry is being injured or likely to be injured by such sales.

Adding uncertainty to this schizophrenic condition is the vagueness of the instructions to the Tariff Commission which would guide it in determining if an industry has been injured or is likely to be injured by dumped imports.

There is no standard by which or from which injury can be measured, thereby making the act “worthless as a real protection for American industry against dumping,” Mr. Poole asserted.

This condition is not newly discovered, Mr. Poole said, calling attention to a previous report of the Senate Finance Committee in 1954. In that report the committee said in part, “The committee recognizes that further substantive changes in the Anti-Dumping Law may be desirable particularly in relation to price and injury definitions.”

The failure of the act to afford any relief is illustrated by the proceedings brought by the domestic potash industry in 1954, Mr. Poole said. In these proceedings, the Treasury Dept. found that muriate of potash originating in the Soviet zone of Germany, the West German Republic and France was being sold in the U.S. at less than fair value or at dumped prices. The question of whether such dumping had caused injury to the domestic potash industry was then submitted to the Tariff Commission for determination.

Evidence was introduced before the Tariff Commission, and not contradicted at any point, which clearly showed that from early 1953 to the date of the 1954 proceedings, 8% of the total domestic market was being supplied by potash from East Germany, West Germany and France at dumped prices. This represented 20% of the market along the Atlantic Coast where 40% of domestic consumption takes place.

The evidence also showed that the domestic producers could have supplied this market and would have done so had it not been for the dumped imports. Based on published statements of the U.S. Department of Agriculture, it is estimated that the annual domestic demand for potash is roughly 500,000 tons K₂O less than our productive capacity.

The Tariff Commission, however, was unable to find that the domestic potash producers were injured or were likely to be injured as a result of such dumped imports. No indication was given of what test of injury the commission had applied.

Mr. Poole added to the potash industry position in opposing H.R. 6006 as inadequate as he made the following comments to the committee:

“Prior to 1954 and for a period of

33 years the Anti-Dumping Act was administered exclusively by the Treasury Dept. In all those years, the Treasury Dept. did not undertake to define this crucial term. Moreover, an examination of the cases which came before the Treasury Dept. fails to reveal any workable or consistent standards of injury. Nevertheless, the Treasury has recommended that injury continue to be undefined and that the Tariff Commission apply its discretion—which in this case means a completely unbounded discretion—in defining the term.

It is instructive to note from Jan. 1, 1934 until the enactment of the 1954 Customs Simplification Act, out of 146 cases disposed of by the Treasury, injury was found in only 7 instances. And since October of 1954 through 1956, out of 52 cases dis-

posed of by the Tariff Commission, there was only one finding of injury.

The basic question posed by this hearing must be: What is the purpose of the Anti-Dumping Act? Before the merit of the proposed legislation can be analyzed, the Congress must determine what the act should accomplish.

This determination cannot be made without considering the meaning which should be given the word ‘injury.’ To avoid that problem is to avoid the question of the purpose of anti-dumping legislation. This question is a broad legislative question which only Congress is qualified to decide. It must not be left, as the present statute leaves it, in the hands of an appointive administrative body. House Bill 6006, drafted by the Treasury Dept., does not face this problem. House Report No. 1261, at page 2, states correctly: ‘The amendments to the Anti-Dumping Act contained in H.R. 6006 are of a technical nature and do not involve any change in the basic policy of the act.’”

California Firm to Dedicate New Building

SAN FRANCISCO—Wilson & Geo. Meyer & Co., western distributor of agricultural and industrial chemicals, has announced that ceremonies dedicating the firm's new offices, warehouse and bulk storage facility at 2060 Garfield Avenue, Los Angeles, will be held April 2.

The new facility, erected at a cost of about \$500,000, doubles the Meyer firm's present Southern California space at 4800 District Blvd., which it occupied only seven years ago.

BARLEY RESEARCH FUND

ST. PAUL—The University of Minnesota will receive \$55,000 per year for an indefinite period from the Malting Barley Improvement Assn., Milwaukee, for barley research. The grant will be used by the departments of agronomy and plant genetics, plant pathology and botany and agricultural biochemistry.

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Business Insurance Practices Main Topic For Minnesota Anhydrous Ammonia Group

MINNEAPOLIS—Insurance and state laws and regulations concerning the transportation and application of anhydrous ammonia were main topics discussed at the spring meeting of the Minnesota Anhydrous Ammonia Assn. here March 24. Speakers included representatives of insurance companies, and the Agricultural Ammonia Institute. Dale Anderson, Ortonville, Minn., president of the state group, presided at the meeting.

Russell Steen, American Insurance Group, Minneapolis, told the anhydrous ammonia dealers that insurance coverage for such a business may be greatly simplified by carrying all casualty policies with a single company. He warned against spreading one's insurance too broadly, because so-doing means higher premium rates and sometimes less protection.

Mr. Steen emphasized that all auto

insurance should be "in one package," and that one should be particularly sure he has trucks and commercial trailers under a single policy. Otherwise, the speaker pointed out, in case of an accident, an argument might arise between two companies whether it was the truck or the trailer that caused the damage. If all insurance is with one firm, there is little occasion for discussion.

Following Mr. Steen's presentation, Ed. Feyder, also of American Insurance Group pointed out some of the hazards inherent with the operation of an anhydrous ammonia plant from the standpoint of liability. He reminded that unless the plant is fenced in, the presence of tanks, ladders, and outside machinery presents an "attractive nuisance" to children who could

easily be hurt if they attempt to climb around on various objects in the plant area.

Mr. Feyder reminded that during off seasons, plants are left unattended sometimes for days at a time, and unless precautions are taken, damage could occur. He added that good housekeeping around a plant yard is good business not only from the standpoint of safety, but also for taking care of valuable equipment.

The problem of transporting application equipment along highways was brought out by Mr. Feyder, who urged the distributors present to make sure reflectors or some kind of warning lights are on all trailers if used on highways at night. In some states, he said, it is mandatory that trailer tanks must have brakes, and in all cases, safety chains are required.

When it comes to employee liability, an essential point is to hire reliable men, Mr. Feyder said. All workers handling NH₃, he said, must be fully informed about safety procedures, including the kind of clothing to wear,

what to do in an emergency, and they should be urged to take time to be safe. A good supply of water should be available at all times, the speaker said.

Frank Jordan, Memphis, Tenn., representing the Agricultural Ammonia Institute, told the men that anhydrous ammonia is the "most dynamic and biggest single thing to hit agriculture in the past 20 years." He recalled some of the history of the use of NH₃, tracing the development of various techniques from its beginnings in California in 1933 up to the present time.

Originally used in connection with irrigation practices in arid regions, anhydrous is now used of course in all types of climates and most soil types. He reported that in the Pecos Valley of Texas where the climate is very dry, the use of anhydrous has increased cotton yields to as much as 3½ bales an acre as compared to a national average of 1½ bales. Only five years ago, he said, the average yield was only ¾ bale an acre. He added that the type of cotton grown under these conditions is not the kind that contributes to surpluses, since it is the long staple variety much in demand.

Mr. Jordan told about the application of anhydrous in citrus groves in Texas, both by irrigation and by injection into the ground. He also reported its use on legumes, a crop previously thought to have no need for further applications of nitrogen.

In discussing the business considerations of operating an anhydrous outlet, he reminded the dealers present that an ample profit must be gained if they expect to make a living out of their efforts. Not only more sales, but wider margins of profit are mandatory, he said. "Don't give your profits away," he urged the group.

The Minnesota group will elect new officers at the fall meeting, time and place of which is to be announced later, according to Dale Anderson, president. Other officers of the association are: Paul Lindholm, Gaylord, Minn., secretary-treasurer; and Kenneth Hiniker, Eagle Lake; Robert Ringhofer, Owatonna; Gerald Michaelson, Dawson; Hiram Fairchild, Blue Earth; and R. D. Slack, Le Sueur, directors.

Aerial Application of Fertilizer Being Tried

KNOXVILLE—Fertilizer is being applied by airplane in Tazewell County, southwest Virginia, on an experimental basis. The experiment was planned by the extension service in cooperation with other agricultural agencies in the area.

High analysis, mixed fertilizer, such as 0-40-20, made with TVA calcium metaphosphate, is used in the experiment. Fifty tons have thus far been applied. It is planned to use a total of 2,000 tons in the experiment. Several other Tennessee Valley counties in southwest Virginia are making plans for similar demonstrations.

Spreading fertilizer by plane was first tried in the valley earlier in the year on a limited scale in Washington County, Virginia. In that initial test a single wing light plane was equipped with a hopper mounted behind the pilot. At the bottom a fan type spreader was mounted on the underside of the hopper with the opening control in the cockpit of the plane. This was opened at the approach to the field and the fertilizer drifted out. The pilot flew about 20 feet above the ground. Owing to an unfavorable wind the pilot carried only 300 lb. of fertilizer. It is believed that 900 lb. is a minimum that can be carried to make the venture feasible from an economic viewpoint, and then only if the fertilizer used is of high analysis, TVA said.

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Fertilizer Gets Boost On Railroad Tour

MARYSVILLE, KANSAS—Use of commercial fertilizers to gain more profits was cited by two Kansas City agronomists in the Union Pacific Railroad Co. agricultural car here in March.

Arlan Woltemath, agronomist for Spencer Chemical Co., and John A. Miller, agronomist for Consumers Cooperative Assn., were the chief speakers who termed commercial fertilizers "a wise investment for farmers in the Marysville area."

Refreshments were served during the day in the passenger station here by the Blue Valley Fertilizer Co. not far from where the agricultural car was stationed on the track.

In his address to the group, Mr. Woltemath conceded it costs more money to raise an acre of corn using recommended practices and fertilizers. "However," he said, "reliable tests have consistently shown that the extra investment which the better farmers have in their crops return them extra profits per acre."

"Sometimes these extra few bushels of yield mean the difference between a profit and loss in that particular crop. It appears that these extra bushels are the key to the farmers' survival in this day of lower selling prices and higher buying prices."

Mr. Miller also urged investment in fertilizers "as an investment that will certainly boost profits."

Kansas farmers have changed from horse to tractors, from binders to headers to combines, but why have 60% of them failed to use fertilizer to maintain their soil fertility," Mr. Miller asked.

"It is especially important that farmers starting to irrigate crops make the proper application of fertilizers," he continued. "Tests in North Central Kansas showed that irrigated corn properly fertilized produced 72 bu. per acre more than irrigated corn not fertilized."

Local soil fertility conditions were discussed by Ed Hedstrom, Marshall County agent. In summing up the results of the soils tested in the Marshall County soil testing laboratory, he said that most soils tested are deficient in the per cent of organic matter, most soils do not have sufficient available phosphorus per acre for maximum yields and over 86% of all soils tested needed lime.

The Union Pacific Railroad Co. fertilizer car visited several towns along its route.

Ten Worst Pests Listed By Oregon Entomologist

CORVALLIS, ORE.—A list of the ten most important pests of crops and forests in Oregon has been compiled by Joseph Capizzi, cooperator entomologist with the Oregon state department of agriculture plant pest surveys, the Oregon extension service and the USDA.

The gallery of pests, which Mr. Capizzi says do not appear in order of their importance, is:

Aphids—probably most important of the plant pests. Many species are involved and almost all crops are attacked. Degree of loss is difficult to evaluate since these insects are primarily foliage feeders.

Mites—like the aphids, mites are prolific and persistent. Many species are pests so no one species is listed.

Sympylids—increasingly important on truck and field crops wherever grown in Oregon. Control measures are expensive and erratic.

Western cherry fruit fly. An example of an insect that causes little actual damage to our \$5½ million commercial cherry crop when proper control measures are applied; but every grower must apply control measures to protect his crop.

Codling moth and pear psylla. Without continued control practices against these pests, commercial production of fruit (particularly apples and pears) would be impossible.

Onion maggot. In 1957, of Malheur County's 2,600 acres of onions, an estimated 15-20% of crop was lost to this maggot. (The Malheur 1957 onion crop is valued at \$1,685,000.) In other onion areas control practices were effective but some losses occurred.

Hessian fly—worst outbreak in the Willamette valley in 30 years affecting spring wheat and barley. Conservative damage estimated at \$500,000.

Balsam woolly aphid continues to increase in importance. Epidemic infestations total 385,200 acres subalpine fir stand mostly in the Willamette National Forest. No satisfactory control measures are known.

Spruce budworm—830,960 acres of epidemic infestations were recorded in Oregon in 1957; 812,000 acres in and adjacent to the central Blue Mountains were recommended for control treatment during 1958.

Of insects affecting man, animals and households, Mr. Capizzi listed

cattle grubs, mosquitoes, earwigs, houseflies, termites, carpet beetles, roaches, sheep ked, Northern fowl mite and cattle lice.

Rohm & Haas Reports More Sales Volume in 1957

PHILADELPHIA, PA.—Rohm & Haas Co. reported that its sales for 1957 were 9.5% ahead of the year before, despite an appreciable slowing down of sales during the final quarter of 1957. Total sales for 1957 were \$174,053,023 as compared to \$164,078,178 in 1956.

The firm's fungicidal product, Dithane, was one of the items registering "outstanding gains," the annual report said.

Despite the higher sales volume however, the company's earnings were down somewhat. Net income after provision for income taxes amounted to \$15,626,086 in 1957 as compared to \$16,099,374 the year before.

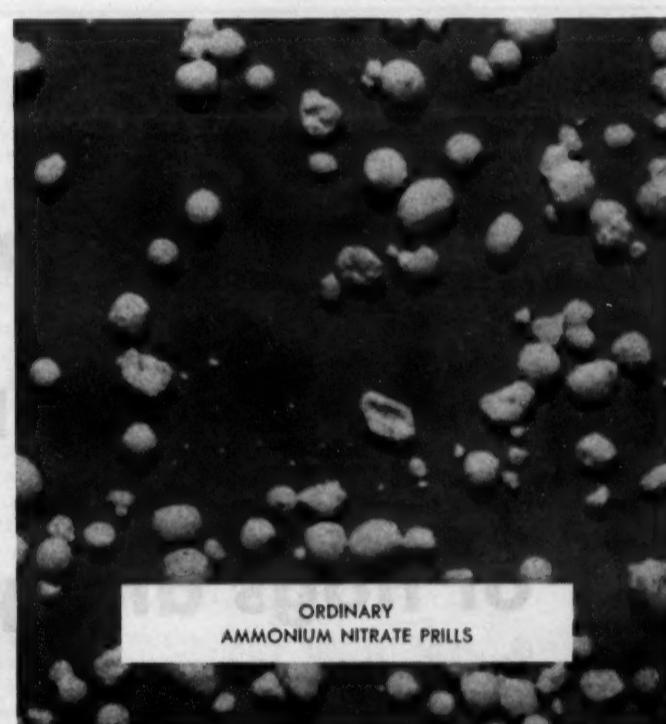
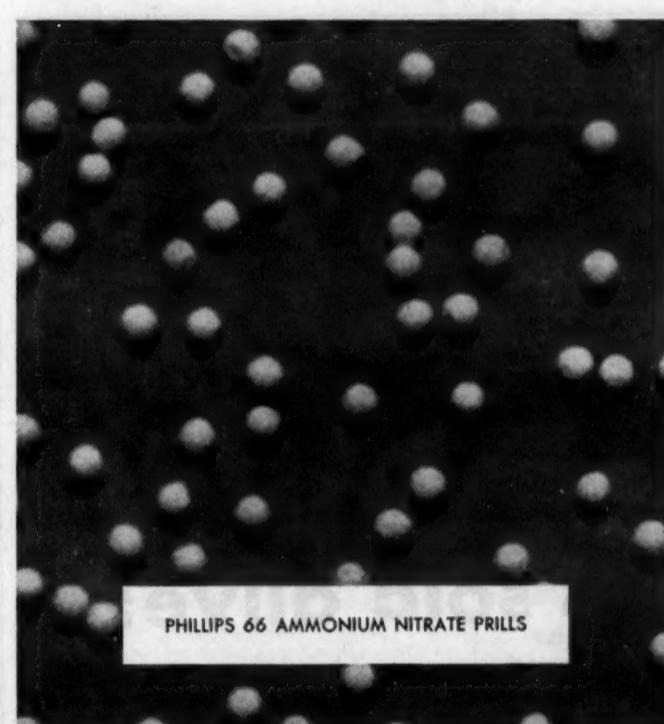
Co-op Plant Sales Approach \$7 Million

LAWRENCE, KANSAS—Despite decline in sales brought on by the drought condition, the Cooperative Farm Chemicals plant east of here did a dollar volume of \$6,968,110 for 1957, according to the 29th annual report of the Consumers Cooperative Assn. here.

Consumers Cooperative owns 75% of the CFCA nitrogen plant here, and takes three fourths of the production.

The local plant produced 21,307 tons of anhydrous ammonia, 13,349 tons of nitrogen solution and 73,145 tons of ammonium nitrate for a total of 107,801 tons, compared to 92,708 tons during the 1955-56 year.

New bagging equipment has been installed in the ammonium nitrate unit. A number of minor improvements have also been installed for the purpose of increasing efficiency.



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DON'T SPARE PLANT FOOD . . .

Use Nitrogen Fully on Few Acres to Produce More and Reduce Unit Cost of Crops

By George D. Scarseth

Director of Research, American Farm Research Association
Lafayette, Indiana

The need for nitrogen in the soils of the Middle West is so great that calculating a figure for nonlegume crops is impossible. That figure would be astronomical and wholly unrealistic!

The amount of nitrogen that should or will be used is related to the degree of efficiency in producing our crops under good management. Some of the factors good managers have to consider are:

1. Supply of the other nutrient mineral elements, including trace elements.
2. Use of herbicides, soil fumigants, and chemical insect or pest controls.
3. The genetic potential of the crop, the stand, and the supply of moisture.
4. Placement and balances and frequency of fertilizer application.

There are many other factors, too, that determine nitrogen need. We

have a tremendous quantity of experimental data bringing out the need for nitrogen and the inter-relationship with these other factors. Many farmers have ventured beyond Experiment Station recommendations in the use of nitrogen and other fertilizer elements.

However, many farmers' reports are spectacular, emphasizing the great potential nitrogen has in connection with good management practices. We must treat nitrogen not as a separate factor but in relationship to all of these various factors.

What then is the true need for nitrogen? It depends partly on how much efficiency we want in crop production. Minnesota, which was using only an average of 3.5 lb. nitrogen an acre of crop land in the 1954-55 season, reflects how inadequate we are in efficient crop production. The same is true of other states.

The same year a few farmers used as much as 100 lb. an acre of nitro-

gen for corn in these same states and even more in subsequent years.

Obviously, if all crops were grown efficiently the crop surplus would be increased. However, up to a point, the cost per unit of crops would go down.

It is wishful thinking to assume that all crop lands will be operated with optimum efficiency. We need only to look at the low average yields of our major crops to see that we don't use the most efficient practices.

Farmers using the major optimum practices have been making money and are presenting severe competition for farmers who are still farming by methods that were adequate before farming became a highly competitive business. This competition boils down to a struggle between the two groups for whatever market there is.

There is much evidence to show that using adequate nitrogen in balance with other top practices to lower the cost of production is profitable. Lowering the cost of production is one way to broaden its acceptance in the market.

The nitrogen deficiency symptoms indicated by tissue tests in most nonlegume crops show that nitrogen is one of the first limiting factors in crop growth.

Any one interested in nitrogen would find it a valuable experience to make plant tissue tests of several kinds of crops, excluding the legumes. Start such tests as soon as growth begins in the spring and continue making them every three or four weeks throughout the growing period until harvest. (Include tests for the other major elements, too).

Such an experience would probably shock you about the great nitrogen deficiencies of most plants at various stages of growth. I believe that whenever a plant is showing no free nitrate nitrogen (except legumes) it is not doing its optimum growing.

All people interested in selling farmers commercial nitrogen should emphasize the need and use of lime just as much as if they were selling clover or alfalfa seed. It is to the future interest of both the nitrogen industry and the farmer that the lime requirements of the soil are not neglected. We have a natural tendency to overlook the fact that most synthetic nitrogen commonly used tends to increase soil acidity. (Notable exceptions are nitrate of soda, calcium cyanamide, and various calcium-nitrogen compounds).

In the Middle West we have built a highly productive agriculture based on mining our soil for nitrogen. Legumes have tended to delay this day of nitrogen starvation. The toll in depleting our soils in phosphorus and potassium, and perhaps other mineral elements is great. Therefore, as our agriculture grows older, we no longer depend on inherited nitrogen from organic matter. In many places, too, it will not be economical to depend on nitrogen from legume sources.

Nitrogen has "magic" in getting crops started early in the spring while the soil is still too cold for organic matter to decay and release nutrients.

In summary, we have two alternatives. Shall we use too much land badly without adequate nitrogen and management practices and seek elsewhere for farm income and soil conservation? Or should we produce what we need on as little land as possible with adequate nitrogen and management practices and thus lower the cost per unit and try to avoid soil damage?

OCTOBER MEETING PLANNED

NEW YORK—The Salesmen's Association of the American Chemical Industry, Inc., will hold its annual sales clinic on Oct. 20 at the Roosevelt Hotel, New York City, according to Raymond Tower of Westvaco Chemical division of Food Machinery & Chemical Corp., chairman of the SAACI sales clinic committee.

Successful Farming farmers raise almost 66% of hogs and pigs sold alive!

Raising the crops to feed the livestock which feeds the nation is one of the biggest jobs in agriculture—a job largely in the hands of SUCCESSFUL FARMING farmers, who produce nearly two-thirds of the hogs and pigs sold alive, and almost two-fifths of the nation's cattle and calves!

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Indiana Dealer Reports

Educational Program Successfully Launches Anhydrous Sales Plan

By Al P. Nelson
Croplife Special Writer

When Kenneth Stooky and Delphos Denney founded the Technical Farm Service & Supply, Inc., Markle, Ind., three years ago, they realized that they had a very important educational job to do. Especially so since their main stock in trade was anhydrous ammonia, concerning which farmers knew only a little.

Therefore, these men began working on a mimeographed booklet explaining what anhydrous ammonia is and how it works in the soil. The booklet was written by Mr. Stooky in language that the farmer could understand, and these booklets were sent by mail to many corn farmers in the area. It was also distributed to farmers who attended the meetings held by Mr. Stooky and Mr. Denney in this corn country.

"That booklet did a great deal to get farmers to buy and try anhydrous ammonia in our first year in business," states Mr. Stooky, "and I can recommend this sort of procedure to any fertilizer dealer who feels that his customers need to know more about actual fertilization processes. Even today many farmers ask for a copy of this mimeographed booklet and we are always glad to oblige."

The second promotional step the firm did was to begin keeping case histories of customers who used anhydrous ammonia. For instance Mr. Stooky and Mr. Denney induced a certain dairyman to put 80 lb. of anhydrous ammonia on his alfalfa land.

This dairyman got twice as much alfalfa as in former years and had enough for his herd. Formerly he had to buy additional alfalfa for his herd. This man's experience, properly documented, helped to sell others in the area.

Mr. Stooky says that his firm stresses the slogan "For every \$1 the farmer invests in anhydrous ammonia he normally gets back \$3," and they work this out on an actual dollars and cents basis on the case histories.

In another instance a man planted tomatoes on some very poor ground, and this ground had had an application of pre-plant anhydrous ammonia. This is against the rules due to vine growth conditions, he said. On top of this anhydrous application the farmer applied 11-48-0 and got some very excellent results on tomatoes from the poor land. The reason no potash was applied, says Mr. Stooky, is that sometimes too much potash on tomato land is injurious to the roots.

"Before you can sell fertilizer intelligently to farmers you've got to know what it will do, and you must prove it through local case histories," Mr. Stooky believes. "Then you can begin to show the prospect what your product has done and he will understand it. The farmer wants the fertilizer dealer to explain these things to him. He has often not had the time on his own to investigate fully the merits of each type of fertilization."

sale and distribution of bottled gas (propane) the last few years. On their large land holdings here, the firm has a 30,000-gal. anhydrous storage capacity and the bottled gas storage is also here. Furthermore, the propane service helps the firm to provide steady year around employment for several men.

These men can use the firm's applying outfits to put anhydrous on farmers' lands in spring and fall and handle bottled gas business the rest of the year. Charges for applying anhydrous to farm land run up to \$2.50 per acre, Mr. Stooky reports.

"The more educational work we do along the right lines, the greater the tendency is for farmers to use more anhydrous ammonia per acre," states Mr. Stooky, "so we most certainly can't neglect this part of our business. We like to hold meetings, because when you get 30 to 60 farmers or more together at one time, they can all hear the sales story, and you don't have to repeat it so many times. Also at a meeting you have the use of colored slides which tell so well the story of plant food deficiencies and also crop yields depending upon the rate of fertilizer application."



"I figure by the way Los Angeles is growing we'll have business out this way soon."

Another very important part of the Technical Farm Service & Supply promotional program is the staging of seasonal educational meetings throughout the territory. These are usually evening meetings, with 30 to 50 farmers attending. Talks, slides and movies usually make up the program. Farmers who attend usually come away with increased knowledge of how the right fertilizer can help them operate more profitably.

The meeting which all farmers in the area look forward to is the fertilizer firm's annual January conference. Here the treat is a big bean supper and trimmings. In this part of Indiana a steaming bean supper is highly prized. In fact farmers sit through a three-hour meeting at this annual affair, which shows how satisfying a good bean supper can be.

The Technical Farm Service staff instructs farmers and helps them to take soil samples. Mr. Stooky reports, however, that once the farmer is given aid to take samples, he can usually do it himself after that.

"This is an extra service to the farmer and we do not charge for it," reports Mr. Stooky. "It certainly helps us to sell anhydrous ammonia and is a splendid service feature which the customers appreciate."

To help round out the firm's sales volume the two dealers took on the

SHOP TALK

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor

Among the most popular topics of speakers and delegates in corridors at fertilizer trade conventions are profits and credit. These topics appear to be even more popular this year because of the relatively high costs of operating a business and the so-called cost-price squeeze of farmers.

Although these topics are frequently discussed and solutions are suggested, there actually is nothing accomplished unless convention participants come away from the meetings determined to take action. Action consists mainly of the determination to study the profit and cost situation to see if the business is economically sound; and to let the local banker take charge of money-lending and credit risks.

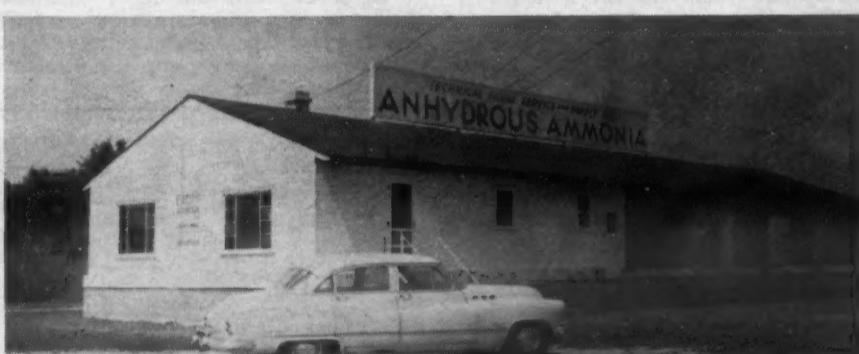
Reports from many conventions indicate that dealers are optimistic about the coming fertilizer sales season. Many claim that it will be better than it has been in several years. The price situation will stabilize to a point where the legitimate fertilizer dealer should realize a fair profit from his business, many industry men say.

Every normal-thinking person—and that includes even the toughest price-shopper—has to admit that the farm chemicals dealer has the right to a fair profit. It is unfortunate for the entire industry that some dealers and manufacturers allow the price-shopper to dictate

sales practices and jeopardize business operations. The dealers and manufacturers who practice a sound pricing schedule suffer severe consequences when others in the industry practice unsound price-cutting.

We feel that more and more manufacturers and dealers will have a stricter credit policy this year. Rising costs of labor and transportation will force many operators to re-examine and tighten credit practices.

Many fertilizer men have found that if they tend to the business of selling their products and let the banker tend to the business of lending money, they will realize more profits at the end of the year.



PLANNED PROGRAM—The exterior view of Technical Farm Service & Supply's headquarters at Markle, Ind., is shown in the above picture. An employee with one of the firm's five anhydrous ammonia applying outfits is shown below. The firm's owners began their business by tying in a program of education with their sales efforts.



Doing Business With

Oscar & Pat



By AL P. NELSON
CropLife Special Writer

The early spring day was wonderfully warm. Even though the screens were not on the office windows of Schoenfeld & McGillicuddy Farm Supplies, a few of the windows were up. Tillie Mason, the plump, ulcerish bookkeeper, who had finally been lured back into employment with a \$5 a week raise, stood at the window a dreamy look in her eyes.

Her lover, Dave Schuster, had said something last night on their date, which led Tillie to hope that at long last—after a six year courtship—he had just about summoned enough courage to propose. She was radiant.

Oscar Schoenfeld paid no attention to the lure and romance of spring. He sat at his desk, frowning, looking over bills, studying delinquent collection lists. Even the fact that he had retrieved six errant paper clips from correspondence, did not cheer him.

"Oh, look!" Tillie suddenly squealed. "Pat is riding one of the new power mowers down the street!"

Oscar glanced up. There was a startled look in his eyes. He came to the window and stood beside Tillie.

Sure enough, Pat McGillicuddy, his long knees sticking up, was riding down the right side of the street, headed for downtown.

"Isn't he a card?" Tillie laughed. "He always does the unexpected! I wonder how far downtown he'll go."

"Ach, he's got one of our best rid-

ing lawn mowers!" Oscar snapped. "If a truck hits him, then we'll have another loss. I'll bet that Irisher doesn't know our insurance will not cover mowers somebody rides down the street!"

"We can always get another mower," Tillie said worriedly, "but I sure hope Pat doesn't get hurt."

"Let him look out for that!" Oscar growled. "Ach, I am worried about that expensive mower."

"I'll bet he did that just to get people to notice the mower," Tillie hazarded. **"He wants to show them that it is easy to mow your lawn this way."**

"Ach, I hope he does not stop and mow lawns, too, for free!" Oscar said. "Better he should come back and take this delinquent account list and go out and collect. That Irisher is still a kid. He'd better grow up before we go bankrupt with his foolishness."

By this time Pat had disappeared. Angrily Oscar went back to his discounts. Tillie took her seat at the typewriter, but now and then, she got up and looked out the window to see if Pat had come back.

"Oh, here he is," she called suddenly.

Oscar was so mad he came and took a look, too. He expected to see a smashed mower, probably hauled back by a garage tow truck, but he blinked twice for he saw a jubilant Pat riding up the black topped parking area, a huge stack of mail under his arm.

"He went to get the mail!" Tillie squealed. "Oh, how interesting. I wonder if he intends to do that every day."

Oscar's face went purple. "He will not!" he burst forth. "I will not have people laughing at us on account of his silly ideas. I will sell out. I will go to a lawyer. Das ist genug."

Back to his desk he went. He was so angry he could not think what to do next. Not even the thought of his savings in the bank, his many bonds, the rentals from two additional houses he had recently bought, brought comfort now. Often when troubled he would feel comforted by the thought of his holdings, attained through thrift, thrifit the way he and Minnie practiced it.

When Pat walked in, a smile on his face, mail under his arm, Oscar was still fuming so much he could not concentrate. "You ought to see the people look at that riding mower!" Pat exulted to Tillie. "I gave them quite a treat. Mowin' the lawn that way is fun."

The telephone rang. Tillie answered, then looked up. "Mrs. Mureson wants to know if you'll come over and demonstrate that riding mower at 2 this afternoon, Mr. McGillicuddy."

Pat's face lighted. "Yes, I certainly will, Tillie."

After Tillie had hung up, Pat said, without looking at Oscar: "You see. She heard about it. People notice promotion ideas. Maybe I ought to ride down to the post-office every morning on that mower and get the mail."

"NO!" thundered Oscar so loudly that the rafters practically shook. "If you want to ride so much, take the truck and ride out in the country and collect those overdue fertilizer accounts. Be a man, not a boy!"

Pat was about to make a sharp retort, his face slowly reddening. Then there sounded the wailing of a police siren. Pat, Oscar and Tillie looked up. In small towns everyone listens to sirens, wonders, tries to figure out where the car is headed.

The siren came closer. In fact, it sounded very loud, until it was literally screaming—in the parking area.

Heavy steps then sounded in the warehouse and a few seconds later a big, heavy, blue uniformed police officer came into the room. It was Cornelius McCoy, the town's only policeman.

"McGillicuddy!" he boomed. "What's this about you almost startin' a riot downtown, ridin' some new foreign make of automobile in and out the parkin' stalls?"

"Why, Connie! It was a power lawn mower, one of those riding kind. I went downtown to get my mail. It's pretty handy for that. I was figurin' on using it every day. What's wrong with that?"

For some strange reason Oscar was suddenly happy. Ardently he hoped the officer would get tougher with Pat, make him cringe.

"Have ye got a license for that thing?" asked McCoy sternly. "Yer ridin' on the public highways, you know."

Pat looked puzzled. "No, I haven't. Do I need a license?"

"License! Sure and a power mower is no better than a truck, automobile or a tractor. They all have licenses. Come on, Pat, did ye have too much boiled cabbage for dinner, or a little too much vodka for breakfast? Is that why ye took that mower downtown instead of a truck or car?"

Pat sighed. "Bein' as how you're Irish, Connie, don't you know how I felt? A spring mornin', begorra, the sun shinin' and a soft wind blowin' and me wantin' to do something, well just a little bit gay. And the power mower handy. Haven't ye ever felt that way?"

"I did once," McCoy admitted. "And if I had known I was getting such a mother-in-law in the bargain I would never have popped the question to Kathleen. But a lawn mower down main street. I have never been that crazy. You better see your doctor."

"I'll tell you what, Connie. You've got a big lawn at your house. Why not let me bring this mower up there this Saturday afternoon and I'll mow your lawn free? You can just sit on the porch readin' the paper, and watch me."

McCoy looked startled. "Well, I like to watch other people work. And that lawn is a big one, begorra. But remember, Pat, I'm not buyin' one. But I'll enjoy watchin' you do the job for me."

He headed for the door, "Remember now, Saturday afternoon. I hate an Irishman who welches on a promise."

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for:

- ★ more accurate spreading
- ★ better NPK pattern
- ★ easier maneuvering
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CANADIAN POTASH SITE—Work continues on the mining and processing facilities of Potash Company of America, Ltd. being erected at Saskatoon, Sask., Canada. The project, expected to be completed by the end of 1958, is part of the company's long-range plans as outlined by G. F. Coope, PCA president (CropLife March 3, page 1) in recent talks about the Canadian venture. The company expects to remove some 4,000 tons of ore a day from the mine when the workings are completed, Mr. Coope said. The ore lies at a depth of some 3,000 feet, which, with weak and water-bearing overlying sedimentary beds, have complicated the shaft-sinking operations. In the picture above are seen (left center) the headframe, tallest structure, with machine shop, hoist house, compressor house and office. In the center is a small warehouse, reagent house, main concentrator building (steel structure), ore preparation plant, housed in, where crushing and screening operations are performed. At the right are four storage warehouses in various stages of construction.



FARM SERVICE DATA

Extension Station Reports

A big opportunity for low cost, high profit milk and meat production has been opened up by pasture improvement through the use of high-nitrogen fertilizers, reports C. J. Chapman, University of Wisconsin extension soils specialist.

"Adding a nitrogen-phosphate-potash fertilizer such as 10-10-10 to pastures in fall can pay off in lower feed bills and bigger milk checks in the following year," says Prof. Chapman.

Prof. Chapman reports that the protein content of fertilized pasture grasses grazed by cattle in late May or early June can run from 18 to 22%.

Farmers will find it profitable, also to top-dress old established alfalfa fields with phosphate-potash fertilizer in fall, he says. This will put new life into old fields and maintain stands for a much longer period.

"More alfalfa failures have resulted from plant food starvation than from winter-killing," he points out.

"When the nutrient reserves of alfalfa roots have been depleted by heavy production of hay, such plants are more susceptible to winter-killing. So it is important to maintain those reserves by top-dressing the alfalfa fields with phosphate-potash fertilizer."

★

Missouri soils are acid, says H. H. Krusekopf, a member of the University of Missouri soils department. This fact has been confirmed in thousands of soil tests.

Only in the extreme northwestern part of the state are the deep, loess-derived soils on the Missouri River bluffs either neutral or calcareous.

Soils are acid because rainfall is sufficient to cause leaching of lime and other more soluble salts. Missouri soils couldn't have acquired their present characteristics if they weren't acid, says Mr. Krusekopf.

Under acid conditions, some of the finest clay particles, and also the organic matter, are dispersed and can move downward into the soil profile by percolating water. This is shown by the higher clay content in the subsoil than in the surface.

The relatively dark color of the subsoil in some prairie soils is due to an accumulation of acid organic material. In general, soils that have a profile composed of four or five distinct layers are more acid than soils with few and indistinct horizons.

An interpretation of all these physical features is a guide in determining soil acidity, Mr. Krusekopf says.

★

"Chemicals, along with other improved practices, are paying off on Nebraska farms." Dr. E. F. Frolik, associate director of the University of Nebraska Agricultural Experiment Station, made that statement at a banquet during the 12th annual Nebraska Weed and Insect Conference.

"How else could one explain that after about 75 years of farming we have just produced the biggest total crop on record? After 75 years of farming, even with favorable weather, you would not expect record yields because soil productivity would have been expected to drop off. This was accomplished in spite of the fact that considerable land was in the soil bank," Dr. Frolik asserted.

"In 1957 we harvested 6% more than in 1952, the previous high production year, and 27% more than the 10-year average," he continued.

State average yield records were set for several crops in 1957, Dr. Frolik reported. They included: corn, 45 bu. per acre; winter wheat, 27 bu.; sorghum grain, 39 bu.; barley, 31 bu.; soybeans, 27 bu. (the highest average yield of any state in the nation) and all hay 1.4 tons.

★

Farmers can cut costs of crop production and boost their net returns by growing higher crop yields per acre through the increased use of fertilizer and power machinery.

C. B. Baker, University of Illinois agricultural economist, states that although the nation's crop output has increased in recent years, the total crop acreage has changed very little since 1914. Meanwhile, the amount of labor on farms has declined an average of 1.6% per year since 1910.

Farmers have been increasing their use of fertilizer at the rate of about 6% each year since 1930, says Mr. Baker, adding that "there is apparently no end in sight to this upward trend."

Power machinery use has doubled since 1935-39, he says.

★

Corn yields of 100 bushels or more per acre are within the reach of farmers who use good field practices, add sufficient fertilizer and plant enough kernels per acre.

That was the statement of Charles A. Simkins, University of Minnesota extension soils specialist, in sum-

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marizing results of the 1957 Minnesota Extra Corn Yield Contest.

Mr. Simkins reports that fertilized corn averaged 19.5 more bushels per acre than did unfertilized corn on the fields of 276 farmers who participated in the contest.

Some individual increases ran much higher. Donald Eickhoff and his son Emil, of Fountain, Minn., boosted yields by 132.5 bu. per acre in a fertilized plot, compared to an unimproved area. Clinton Moline, of Isanti, Minn., increased his corn yields 95 bu. per acre through the use of fertilizer.

Top corn yield in the contest was 165.9 bushels per acre, grown by Donald Hassing, of Easton, Minn. Second place was won by William Zimmerman of Paynesville, with 165.3 bu.

Mr. Simkins says farmers who use proper field practices can profitably invest up to \$20 in fertilizer for corn, if their present yields are below 80 bu. per acre.

QUALITY in PRODUCT in SERVICE

PELLEFORM

Pelleform is the modern fertilizer developed for more efficient crop production. It is mechanically better, flows smoothly and is dustless. Pelleform pellets are uniform for even distribution without waste or burn.

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Smith-Douglass new higher analysis fertilizer means more plant food units per bag... per ton. For example, a 50-pound bag of 6-24-24 Pelleform has more plant food than an 80-pound bag of lower analysis 3-12-12.

TRIPLE ACTING

Smith-Douglass Pelleform
STARTS FASTER... Contains more water-soluble phosphate.
FEEDS STEADY... Releases plant food steadily throughout the growing season.
LASTS LONGER... Contains leach-resistant nitrogen allowing the crop to feed longer.

27 GRAN

A NEW fertilizer, 27 GRAN (granular 27% superphosphate) has just been introduced by Smith-Douglass. Its advantages are ease of handling, no dust, no build-up in bulk type spreaders, better distribution, more stabilized form of phosphorus in the soil, and more economical to use.



Smith-Douglass Dealers sell Quality... in product... in service. Both are outstanding! In the research and production of fine fertilizers... Smith-Douglass is outstanding. Smith-Douglass leaves nothing to chance in controlling quality in each step of its manufacturing processes. Every fertilizer bearing the S-D trademark is formulated specifically... a perfect balance of the finest materials. And Smith-Douglass means service! Smith-Douglass guides their dealers through long experience and thorough study of local soils, crops and fertility requirements, helping them to better service farmers in their area. Smith-Douglass dealers realize good earnings because they have more to sell... quality, new higher analysis fertilizers, service and results. Let us show you good proof that Smith-Douglass fertilizers are the farmers' and the dealers' "best buy."



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Quickly mounted D-100 and D-60 anhydrous ammonia LiquiJectors, with flow control valve, for smaller acreage and low cost.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Potash deliveries for 1957 showed a slight increase over tonnages recorded the previous year, according to an annual report issued by the American Potash Institute, Washington. Deliveries totaled 3,461,578 tons of potash salts containing an equivalent of 2,026,239 tons K₂O, representing an increase of less than 1%.

Farmers, in stating their intentions for planting 1958 crops, failed to disclose any broad shifts for corn or spring wheat nor did they reveal any particular impact of the soil bank acreage reserve program on corn.

Speakers at the Western Weed Control Conference at Spokane, Wash., said that control of sagebrush on the 24 million acres adapted to spraying, could save more than \$40 million a year. This amount is measurable by increased forage and livestock production, it was pointed out.

Speaking before a group of gardeners in New York, many of whom were unfavorable toward spray programs to control or eradicate insects, Donald L. Miller of the National Agricultural Chemicals Assn. staff, Washington, D.C., pointed out that the fire ant itself would kill more quail, for instance, than would the pesticides used to control the insect. Mr. Miller cited statements made by authorities on birds and other wildlife to counter claims by anti-pesticide speakers.

An attempt on the part of southern cotton producers to have their acreage allotments expanded by some 30% was killed when the Senate refused to suspend the rules to take up the acreage allotment increase amendment proposed by Sen. Allen J. Ellender (D., La.).

Aerial applicators from Ohio and Indiana met at Columbus, Ohio, in a conference to discuss new markets and business possibilities in their areas. Speakers indicated that the use of the airplane in pest control is likely to increase.

Two Senate committees, agriculture and appropriations, approved a price support and acreage allotment "freeze" for 1958. There was no time set for the duration of the arrangement.

A college-industry fertilizer advisory council was formed in Iowa. It will be known as the "Iowa Fertilizer Council" and comprises the fertilizer industry, the state department of agriculture and the State College. John Porter, Iowa Plant Food Co., Des Moines, was named chairman of the group.

The Texas Agricultural Aviation Conference and Pest Control Short Course was held at College Station with some 350 persons present. Reports on pest control results of 1957 trials and recommendations for the new season were made at the meeting.

The value of insecticides and fertilizer materials in the production of cotton were emphasized at the Western Cotton Production Conference held at El Paso, Texas, March 4-5. More than 500 persons were in attendance.

Fertilizer dealers in Montana met at Montana State College to attend a convention sponsored by the Montana Plant Food Assn. Speakers, representing the fertilizer industry and Montana State College, urged the dealers to learn more about their products in order to give farmers more service and information.

The State of California amended its regulations governing use of 2,4-D to exempt from the permit requirements, two products: a wax block impregnated with 2,4-D for control of broad leaf weeds in grass, and the other a diluted solution in a quart container.

The possibility of an additional 30% of cotton acres for 1958 was seen in recommendations coming from the Senate. The agriculture committee planned to ask a suspension of Senate rules to permit cotton farmers to increase their acreage allotments.

The Minnesota Nitrogen Conference, held at St. Paul Feb. 20-22 featured representatives of Upper Midwest land grant colleges, the fertilizer industry, and experiment station personnel on the program. The extent of a great untouched potential for nitrogen use was emphasized by the speakers.

Niagara Chemical Div., Food Machinery & Chemical Corp. announced it is building a new pesticide plant at Greenville, Miss. In charge of the operation, slated to begin production this spring, is Horace W. Lee.

The eleven-man committee making a study of TVA fertilizer activities will continue to offer recommendations and suggestions to the agency for the long run. Its chairman, Dr. Earl O. Heady, Iowa State College, said members of the committee were presently making individual recommendations to TVA, but that the committee would operate as a unit later.

Soil bank policies for 1958, so far as the fertilizer and pesticide industries are concerned, presented a puzzling picture as Congress debated the political angles involved in the matter. No adequate answer to how the law might affect the industry appeared to be forthcoming immediately.

Final results of a survey made for the National Plant Food Institute by National Analysts, Inc., gave an enlightening insight on how farmers regard fertilizers. Soil tests, demonstrations rate high in helping the purchaser to make up his mind on what to buy, the survey indicated. The survey also indicated a need for education of the farmer on even the basic facts of what the grade numbers mean in terms of soil needs.

Paul Gregg, San Antonio, Texas, was named chairman of the Southwest Branch of the Entomological Society of America at the group's meeting at Houston. He succeeded C. R. Parencia, USDA, Waco, Texas.

Dr. George C. Schweiker was named to the new position of manager of research for Velsicol Chemical Corp., Chicago.

Delhi-Taylor Oil Corp. announced that it will develop plans for a \$20 million potash mine and mill in eastern Utah.

*Write for the new Dempster LiquiJector Book—complete details and illustrations.

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BEATRICE, NEBRASKA



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It appears in February issues of The Progressive Farmer, Prairie Farmer, Farm & Ranch, Florida Grower & Rancher, Wallaces' Farmer, Nebraska Farmer, Rice Journal, and The Citrus Magazine.

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Note the magnified granule. The unique shape and size are controlled so that distribution is even and accurate in all spreading operations. And Hi-D granules stay put on the ground.



4. Free Flow.

Hi-D flows freely even on hot, sticky days. Because of its super dryness, high density, and special shape, Hi-D doesn't gum-up, doesn't stick, clog, cake or bridge.



5. Two Key Kinds of Nitrogen.

You get nitrate nitrogen and ammonia nitrogen. One bag of Hi-D supplies as much nitrogen as 1½ bags of ammonium sulphate or 2 bags of sodium nitrate, yet costs less per unit of nitrogen.



6. Two-Speed Fertilizer Action.

Hi-D supplies a total of 33.5% nitrogen in two equal "servings." 16.75% is nitrate nitrogen to get crops off to a fast vigorous start. And 16.75% is ammonia nitrogen to provide crops with a supplemental boost during the growing season.



7. Up to 25% More Nitrogen in the Hopper.

Because Hi-D has less bulk than any other type of ammonium nitrate, you can get up to 25% more nitrogen in a normal hopper load—cover more ground per load. Hi-D saves storage space, too.



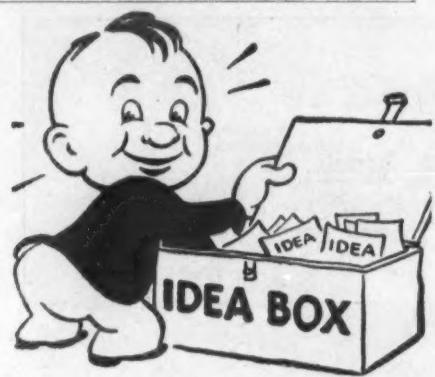
8. Guaranteed to Store a Full Year.

Made dry. Delivered dry. And stays dry. So much so that Hi-D is guaranteed to store well, under normal conditions, for one full year.



Try Hi-D this year. Get all the advantages of the most up-to-date ammonium nitrate you can buy. See if you don't find it better than anything else you ever used. Remember, of course, that sound management calls first for soil testing, a liming program if needed, the mixed fertilizer your dealer recommends—and then the high-yield, pay-off boost of Hi-D. Call your dealer and order yours today!

Nitrogen the Heart of the Harvest!



What's New...

In Products, Services, Literature

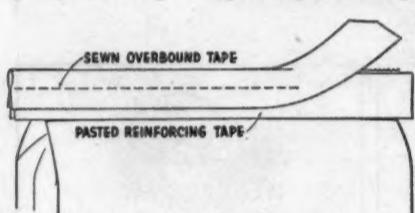
You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6697—Methoxychlor Dust

Geigy Agricultural Chemicals is recommending its Methoxychlor "50" for direct application as a dust or dry powder to dairy cattle for control of horn flies. Available data from such applications has shown zero residues, it is claimed. This conforms with the recent action by the Food & Drug Administration in setting a zero tolerance for methoxychlor in milk, resulting in withdrawal of recommendations for the use of oil or water base sprays on dairy cattle. One-pound canisters of Geigy Methoxychlor "50" are being made available, as well as the standard 4-lb. bag size. Check No. 6697 on the coupon and mail it to secure details.

No. 5971—Bag Closure Method

A method of bag closure, called "Sew-Strong," has been announced by Union Bag-Camp Paper Corp.



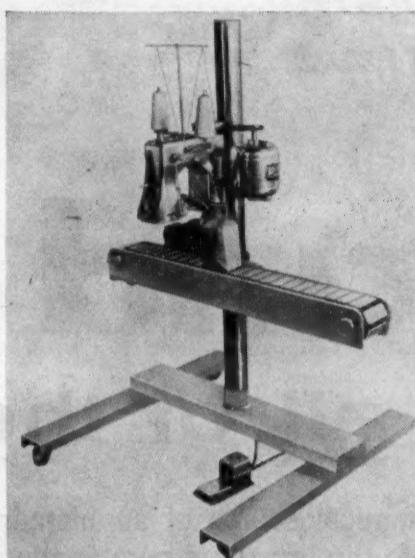
Used with open-mouth multiwall bags, the method employs reinforcing tapes which are fastened to both ends of the bag at the sewing line. This reinforcement serves to strengthen the bag ends where most bag breakage occurs, it is claimed. The "Sew-Strong" closure can be effected with any sewing head having a bound-over tape attachment. Secure details by checking No. 5971 on the coupon and mailing it.

No. 6708—Dusting Product Bulletin

"Ser-a-Sil," a product designed for use in a variety of industrial dusting applications, such as insecticide dusting, is described in a bulletin issued by the Summit Mining Corp. Check No. 6708 and mail it to Croplife to secure the bulletin. Please print or type name and address.

No. 5976—Bag Closer

Production line bag closing for small bags is now claimed possible with the new Minneapolis Model JC-2 Sewing Machine recently introduced by the Minneapolis Sewing Machine Co. The JC-2 model is a power-operated, all metal conveyor unit synchronized with the sewing head for closing bags of all sizes up to 25 lb. The conveyor raises or low-



ers for operation in either a standing or sitting position or to line up with the filling machine. The sewing head adjusts vertically to fit the size of bag. Secure details by checking No. 5976 on the coupon and mailing it to Croplife.

Also Available

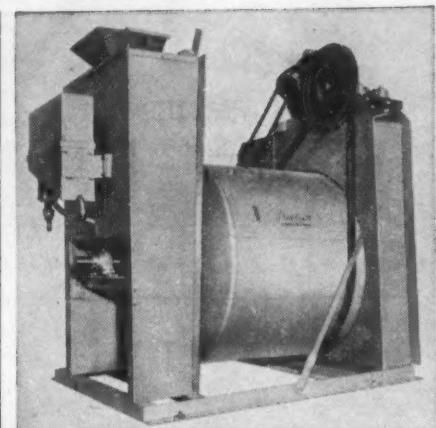
The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 5970—Methoxychlor Specimen Label

A specimen label for "Marlate 50," the 50% technical methoxychlor insecticide wettable powder manufactured by E. I. du Pont de Nemours & Co. is available. Methoxychlor can be used for direct application to dairy cattle as a dust and as a spray in dairy buildings, the Food & Drug Administration ruled recently. Methoxychlor is no longer recommended for direct application to dairy animals by spray or dip. The specimen label has been brought up-to-date in accordance with recent rulings by FDA. Secure the label by checking No. 5970 on the coupon and mailing it to this publication.

No. 5978—Seed Treater

A new automatic liquid seed treater which will treat 350 bu. of seed per hour has been announced by the Panogen Co. Designated the Model LC, the new treater is of the same basic design as the larger automatic treaters. It employs the same principle of weighing and metering the seed; the same principle of tumbling-mixing in a rotating drum until seed is uniformly treated, and the same automatic clean-out to the last kernel, company officials state. Once lines are attached to the shipping



container of liquid seed disinfectant, treating can proceed all day long without stopping machine. No mixing or handling of chemical is required. The treater is shipped complete with ½ h.p. single phase motor and built-in exhaust fan for removal of chaff, seed dust, etc.

No. 6701—Labeling Book

The Manufacturing Chemists Assn. has published proceedings of its 1957 Conference on Precautionary Labeling and is selling it from its office at 1625 Eye St., N.W., Washington 6, D.C. The 52-page book includes complete papers presented at the conference and a list of the 225 government, industry and publications representatives who attended. Please write directly to the Washington address for price information.

No. 6705—Inoculant Label

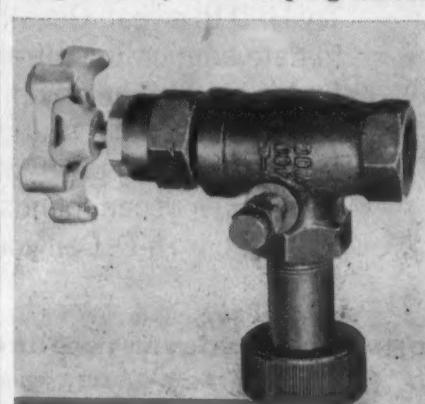
A new foil label for "Kalo" legume inoculants produced by the Kalo Inoculant Co. is being used. The label features a leaf design in metallic colors of green, gold and white on an orange background. The foil is said to safeguard the activity of the nitrogen-fixing bacteria in the treatment by sealing in moisture and keeping a relatively constant atmosphere. Check No. 6705 on the coupon and mail it to Croplife to secure details. Please print name and address.

No. 6702—Lawn Product

A product called by the trade name, "Dyna-Green," has been introduced by the Leeds Chemical Products Co. The product involves a chemical color process that is claimed to turn a lawn green as it is watered and builds a healthier, greener lawn within days. The product is claimed to be waterproof and resistant to washing out. Check No. 6702 on the coupon and mail it to Croplife. Please print name and address.

No. 6703—Hose End Valves

Two types of hose end valves are now available for attachment to ¼ in. and 1 in. vapor and liquid hose ends, announces the Bastian-Blessing Co. The valves combine a "RegO" angle valve, vent valve and hose coupling in one convenient, ready-to-use unit and are ideal for fast, safe filling of trailer and applicator tanks, company officials claim. The hose end valves are also available with the "RegO" safety hose coupling instead



Send me information on the items marked:

- No. 5942—Silage Product
 - No. 5970—Label
 - No. 5971—Bag Closure
 - No. 5976—Bag Closer
 - No. 5978—Seed Treater
 - No. 5989—V-Belt Booklet
 - No. 6697—Methoxychlor
 - No. 6698—Attachment
 - No. 6699—Tank Gauges
- (PLEASE PRINT OR TYPE)

- No. 6700—Selector
- No. 6701—Labeling Book
- No. 6702—Lawn Product
- No. 6703—Valves
- No. 6704—Metal Signs
- No. 6705—Label
- No. 6706—Wax Liner
- No. 6707—Valves
- No. 6708—Dusting Product

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of the conventional hose coupling. Check No. 6703 on the coupon and mail it to Croplife to receive details. Please print or type name and address.

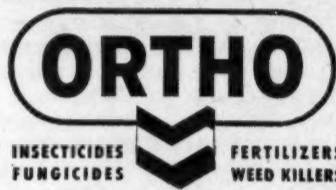
No. 5989—V-Belt Booklet

A 16-page booklet entitled, "V-Belts, the Testing, Inspection and Control of Their Quality," has been issued by the Goodyear Tire & Rubber Co. The booklet describes in words and with pictures how raw materials and finished belts are tested and inspected. One section of the book explains quality control procedures, another is concerned with experimental production. Check No. 5989 on the coupon and mail it to secure the booklet.

No. 6704—Metal Signs

The California Spray-Chemical Corp. has available 3 by 5-ft. "Ortho" dealer identification signs which are

JOHN D. DOE



CALIFORNIA SPRAY-CHEMICAL CORPORATION

constructed of 28-gauge metal, embossed at the edges for rigidity and have a baked enamel finish. The sign has a dealer imprint area which allows for one or two lines to carry the dealer's name. Check No. 6704 on the coupon and mail it to Croplife to obtain details. Please print or type name and address.

No. 6707—Plastic Solenoid Valves

The "SV-5100" series of all-plastic, corrosion-resistant solenoid valves has been announced by the Valcor Engineering Corp. The valves are recommended for handling non-oxidizing and oxidizing chlorides, sulphuric acid salts, phosphoric acids, sodium phosphates and hydrochloric acids. Secure detailed information by checking No. 6707 on the coupon and mailing it to Croplife. Please print name and address.

No. 6699—Tank Gauges

A two-page bulletin issued by the Jordan Industrial Sales Division of the OPW Corp. describes the "OPW-Jordan" direct reading tank gauges. The gauges are recommended for liquid storage tanks up to 40 ft. in height. The bulletin describes features of the gauges and material specifications. Check No. 6699 on the coupon and mail it to Croplife to secure details. Please print or type name and address.

No. 6706—Wax Lined Cans

Metal cans with a sanitary, odorless and tasteless wax lining that resists corrosion have been developed by George D. Ellis & Sons, Inc. The coating of 100% hydrocarbon, micro-crystalline, petroleum or other types of waxes hot-sprayed into the finished can by an exclusive Ellisco process may be applied to any size or shape can which has an opening of $\frac{1}{2}$ in. or larger. Secure details by checking No. 6706 on the coupon and mailing it to Croplife. Please print name and address.

No. 6698—Applicator Attachment

A new multi-purpose fertilizer spreader or applicator attachment for use on tractor tool bars has been in-



troduced by the E. S. Gandrud Co. Called the "Gandy Spred-N-Till," the new attachment is said to perform a number of field operations—broadcast or drill small grains and seeds; broadcast, drill, band, sidedress or deep-place fertilizer or granular chemicals such as insecticides. For broadcast applications the unit handles materials at the rate of 2 lb. to 4,000 lb. per acre. The applicator comes in 6-ft. and 8-ft. widths. Details may be secured by checking No. 6698 on the coupon and mailing it to Croplife.

No. 6700—Electric Selector

The H. D. Hudson Manufacturing Co. has developed an electric sprayer and duster selector to determine the recommended sprayer or duster to use on a job. Hudson dealers can locate on the board the particular job to be done and insert a pointer into the proper hole. A light flashes alongside of the printed recommendation of a sprayer or duster. Check No. 6700 on the coupon to secure details. Please print or type name and address.

No. 5942—Silage Product Folder

A folder about "Spring Pasture," a product said to make silage "more appetizing and nutritious" and which "deodorizes grass silage" has been prepared by the Kalo Co. The product supplies an antioxidant to inhibit oxidation. Suggestions for use with grass, corn, sorghum and other sil-

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lage, with poor quality roughage or in feeds are included in the folder. Secure the folder by checking No. 5942 on the coupon and mailing it to this publication. Please print or type name and address.

TO CONNECTICUT STATION

NEW HAVEN, CONN.—Appointment of Walter S. McNutt to the staff of the Connecticut Agricultural Experiment Station has been announced by Neely Turner, vice director of the station.

NEW!!

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Sohigro Urea is the high-nitrogen fertilizer that will bring in new trade for new profits from your fertilizer sales. This free-flowing, prilled, 45% nitrogen fertilizer from Sohio produces top results in the field . . . increases customer satisfaction. That's why Sohigro Urea is favored for all season use . . . why it's the best all-nitrogen supplement for any complete line. For complete information, write the address below.

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WEED OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board



Green Foxtail

(*Setaria viridis*)

How to Identify

Green foxtail, one of the most common grassy weeds found growing in cultivated land, gardens, lawns, and waste places, is an upright plant from 1 to 3 feet in height. Leaves are dark green in color and are alternately arranged on the stem. The head is dense, green in color, 1 to 3 inches long and covered with many stiff upright green bristles. Seeds are small, nearly oval, slightly flattened on one side, usually green, but may be yellow, brown or black. Roots of the plant are shallow and very fibrous.

Habits of Green Foxtail

An annual, reproducing only from seeds, green foxtail appears in cultivated fields, gardens, roadsides, and waste places. It flowers from July to September and seeds from August to October. It is generally distributed, but is not a native of the U.S., having been introduced into North America from Europe. The plant, a particular pest in gardens, is usually present

until overtaken by frost in the fall of the year. It has a capacity for producing an enormous amount of seed, and its persistence is due to a considerable extent because some foxtail seed is usually found in every kind of crop seed harvested, thus enabling the weed to spread to new areas.

Control of Green Foxtail

This plant is susceptible to a number of chemical herbicides used in accordance with state recommendations and strictly in keeping with manufacturers' label instructions. Green foxtail yields readily to cultivation, but it has been found difficult to keep an area clean from this weed because its seed is produced in such a relatively short time. Cultural practices include cultivating cornfields lightly late in the season to prevent foxtail from producing a crop of seed. Early plowing or disking of the small-grain stubble fields will also help in keeping foxtail from maturing.

NORTH CENTRAL ESA

(Continued from page 1)

and sweet corn at both research and commercial levels. He described their use of the slurry method of treating seeds with systemics, and reported that a number of successful techniques had been worked out to protect the young plant from insect pest attack.

Dr. Lilly reported on four experiments made in Iowa using gibberellins to determine their yield-increasing properties. The four tests, made in widely-separated portions of the state, gave conflicting results, he said. Two of the tests came out with a lowered yield and the other two with a higher output so that the average of all four was approximately even.

Dr. Lilly reminded the group that such a test was far from conclusive, and that other experiments will be made in the future. He added, however, that the use of gibberellic acid on corn is "neither good nor bad," so far as extra yield is concerned.

Lawrence K. Cutkomp, University of Minnesota entomologist, described a recent experiment made with granular insecticides for grasshopper control in Minnesota. Formulations of both aldrin and heptachlor were applied to an alfalfa field infested with adults and older nymphs of the red-legged grasshopper, he reported. Small dosages of both aldrin and heptachlor were applied, ranging from 3 to 10 oz. an acre.

Because these dosages gave nearly complete control of the grasshopper throughout the treated area, it was difficult to determine the lowest effective rate of application for either insecticide. However, "the results appeared very promising for these formulations at very low doses," Dr. Cutkomp said. Further tests on large areas will be needed to determine the most economical and effective levels to use, he added.

Two papers covering the corn leaf aphid were presented by C. A. Triplehorn, Ohio State University, and J. H. Bigger, University of Illinois. The insect, which became abundant during the 1957 season in Illinois, was blamed for widespread barrenness of corn plants. Mr. Bigger told the group that the same situation had developed some years back, and that investigation at that time had shown that many heavily infested plants failed to produce an ear of corn.

Likewise in 1957, he said, investigations were made on "any infested field that could be found," and the tabulations showed that of the infested plants, 57.27% were barren, as compared to only .07% barren plants among the uninfested plants.

C. R. Weaver, Ohio Agricultural Experiment Station, Wooster, presented a mathematical formula by which calculations may be made to determine the effectiveness of various insecticides against the meadow spittlebug. He termed the method a multiple regression equation based on the insecticide used, its concentration, the gallonage applied, the height of crop, time of application and original infestation. Each factor received an evaluation which went into the formula, enabling the entomologist to make recommendations in keeping with the conditions involved.

C. C. Burkhardt, assistant entomologist at the Kansas Agricultural Experiment Station, discussed control of insects attacking sorghum. This crop, he said, has seen a 3-fold increase within the past 10 years, with Kansas contributing an increasing amount each season. In 1957, he said, the Kansas crop represented over one fifth of the national total.

Insects affecting the crop include the corn leaf aphid, corn earworm, fall armyworm, chinch bug and kafir ant. Mr. Burkhardt described the

degradations of the ant as being particularly costly. Discovered first in Kansas about 1911, the pest has cost farmers millions of dollars by way of decrease in plant stands, complete losses of planting, replanting costs of seed, time and effort. One of the major areas of damage lies in the "hollowing out" of seeds, preventing germination.

Insecticides effective in preventing this damage to seeds, as reported by Mr. Burkhardt, included aldrin, lindane, heptachlor, panogen and diel-drin. The cost of seed treatment, he said, is low enough to warrant routine treatment. Stand increases were significant, ranging from 25.5 to 367.7% with various treatments.

Reports of the March 27 and March 28 sessions of the convention will appear in next week's Croplife.

New Fertilizer Firm Formed in California

CHICO, CAL.—A new company to produce agricultural fertilizers has been established here. The new firm, Farmers Agricultural Chemical Co., will be under the direction of three Chico men. They are Jack L. Rawlins of 814 Toyon Way, O. A. Kilpatrick of 315 W. Legion Ave. and Jerome D. Peters, Jr. of 117 W. Lincoln Ave.

JOINS IMC DIVISION

CHICAGO—International Minerals & Chemical Corp. has announced that George B. Shearon has joined its phosphate chemical division as a process engineer at its Bonnie, Fla., plant. Mr. Shearon comes to IMC after three years in the U.S. Air Force as a pilot. Before his military service he had been a chemical engineer with Standard Oil Co. at Bayonne, N.J.

Fire Levels House Of Richard Yates

WILMINGTON, DEL.—Richard Yates, director of sales in the Naval Stores Dept. of Hercules Powder Co., lost his residence to fire on the evening of March 20. The blaze, which leveled the house, came as a result of unprecedented blizzard conditions which cut off electric power and stopped fuel deliveries in a wide area of the east.

The family had been without electricity for more than 24 hours, and had to utilize the fireplace for warmth in the house. The building caught fire apparently from the unusual heat in the flue.

Fire fighting equipment was unable to reach the house situated off the highway near Wilmington, and a bulldozer was called into play in an effort to clear a path through towering snowdrifts. The attempt was futile, however.



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NEWS FOR FERTILIZER MANUFACTURERS—USP offers 3 outstanding grades of potash. There's USP's Higran, a new specially-sized white granular (62/63% K₂O)—and USP's Higrade muriate (also 62/63% K₂O). Both are the purest agricultural muriates now available. And there's USP's Granular muriate which contains 60% K₂O. All three are non-caking and free-flowing throughout and will meet your standards with flying colors.

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Farmers Launch Weed Control Fight

MOSCOW, IDAHO—Latah County farmers, in this, the northwest's principal pea producing area, have launched a fight to stamp out their main problem—weeds.

Noxious weeds cost the county about \$1,000,000 a year, \$800 per farm or about \$50 for every man, woman and child in the county.

Local districts are working out a "neighbor help neighbor" program. "One man can do an excellent job of killing weeds, but if an adjoining landowner lets his weeds go, the job never ends," Homer Futter, Latah County agent, said.

Washington State Meeting Series Ends

SEATTLE, WASH.—Farmers and dealers in the northwestern part of Washington demonstrated their willingness to learn more about soils and

fertilizers during the winter months by attending a series of soils and fertilizer meetings sponsored by the Skagit Valley Junior College. Sparked by instructor, Dick Nowadnick, and station superintendent, Martin Carstens, the meetings were attended bi-weekly by approximately 80-100 regular "students." Speakers at the meetings covered a wide range of subjects from the geology of the area to radioactive phosphorus studies with plant materials.

At the final meeting on March 12, the farmers and dealers in attendance heard a panel of experts discuss the relative merits of soil tests and tissue tests as an aid to producing better yields of high quality crops.

Participants in the final program included Dr. R. B. Walker, University of Washington; Ted Akkerman and Dr. W. P. Mortenson, Skagit Valley Junior College, and Todd Tremblay, National Plant Food Institute.

SAFETY PUBLICATIONS

CHICAGO—The National Safety Council has two new publications available for industry—one for employees, the other for foremen. The publications, "Rules for Safety" and Book 8 in a series of "Five Minute Safety Talks for Foremen," are designed to promote safety in industry. Free copies of descriptive brochures on the literature are available from the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

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AT OREGON MEETING—Three speakers who appeared on the program of the Oregon Feed and Seed Dealers Assn. at Portland recently are seen looking over figures covering potential fertilizer tonnages for western Oregon at the meeting. Left to right, they are Todd Tremblay, National Plant Food Institute; Dr. T. L. Jackson, Oregon State College, and Grant Braun, American Potash Institute. Their talks at the meeting emphasized the great sales and use potential for fertilizer in the northwest.

Fertilizer Potentials Huge in Oregon State, Speakers Tell Dealers' Convention

PORTRLAND, ORE.—Timely discussions on fertilizer potentials in the Willamette Valley of Oregon featured the 27th annual meeting of the Oregon Feed and Seed Dealers Assn. at the Multnomah Hotel here March 13-14. Speakers at the convention represented Oregon State College, the National Plant Food Institute, and the American Potash Institute.

Dr. Tom Jackson, Oregon State College, gave an illustrated talk on the need of high soil fertility to grow legumes on the "red hill" soils of western Oregon. Dr. Jackson stressed the importance of liming the soils up to a pH of 6.0 or better before attempting to establish legumes.

"Handling of phosphate at the time of planting for alfalfa on the red hill soils is a vitally important factor in establishing stands," Dr. Jackson pointed out. Sulfur is another important fertility element on many of the red hill soils. "The establishment of

sub-clover and alfalfa on our upland soils will require large amounts of phosphate, sulfur, and potash," he stated.

Grant Braun, American Potash Institute, presented some estimates of fertilizer requirements for forages in western Oregon based on some recent studies he has made. About 4,000 tons of nitrogen are now used on grains and grass seed as compared to a potential need of 12,000 tons N. These same crops could use 4 times the phosphate they are now using if experiment station recommendations based on soil tests were followed.

Mr. Braun stated: "The very large potential use for fertilizers in western Oregon is on forage crops, pasture, and non-cropland pasture. While the present use of P_2O_5 on these crops is 2,000 tons, the potential use is 70,000 tons. Present use of potash is 1,000 tons as compared to a potential use of 40,000 tons." Mr. Braun pointed out that while we concentrate on selling fertilizers to the fruit and vegetable farmers, our big potential sales outlet is to the farmers producing forage crops.

Todd Tremblay, National Plant Food Institute, gave an illustrated lecture on the importance of soil tests and demonstration plots as tools for getting a good forage fertility program underway. Mr. Tremblay stated, "The dealers are a very important link in helping to get a program rolling to realize the tremendous potential in fertilizers on forages. By cooperating with the State College on its soil testing programs and field fertility trials, we can help put the story across to the farmer."

Karl Baur of Pacific Cooperatives acted as the master of ceremonies during the program.

Sales Agent Named

WEST CALDWELL, N.J.—Rockland Chemical Co. here recently named the Roy Erickson Co., Harrisonburg, Va., as its exclusive sales agent in Virginia, West Virginia and Western Maryland. The Erickson firm will carry a full line of Rockland agricultural chemical products.

Effective Pest Control . . . Means PROFIT!

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HAROLD H. SHEPARD, chief, Agricultural Chemicals Staff, Commodity Stabilization Service, U.S. Department of Agriculture.

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Oliver M. Smith

Oliver M. Smith of Bemis Dies at 57

MINNEAPOLIS—Oliver M. Smith, manager of the Bemis Bro. Bag Co. Minneapolis bag factory and its sales division, died unexpectedly. He was 57 years old.

Mr. Smith was well-known to many millers and feed plant operators. He made their acquaintance while traveling as a salesman for Bemis for more than 15 years.

Mr. Smith joined Bemis in 1920 as a draftsman in the engineering department in St. Louis during school vacations. He was then attending the University of Missouri. He became a full time member of the company in 1922 and was transferred to the order department in Minneapolis. The following year he became a salesman. Mr. Smith was made sales manager for the Minneapolis plant in 1940 and was appointed manager in 1952.

Surviving are his wife, Esther; a son, Robert O., Houston, Texas; a daughter, Mrs. J. J. Paull, Jr., New Martinsville, W.Va.; his mother, Mrs. C. O. Smith, Brainerd, Minn., and a brother, Robert H. Smith, Webster Groves, Mo.

Good Management Needed with Irrigation

AMES, IOWA—Irrigation can bring efficient crop production only when coupled with proper fertilization and management, John Pesek, agronomist, said recently at the Iowa State College Irrigation Short Course.

Mr. Pesek said that other management practices may be just as important as fertilization. Planting stands of around 18,000 plants per acre of a good hybrid is necessary, because irrigation raises the potential yields of a field. Higher yields require more nutrients and more plants on which to grow corn.

To date, Mr. Pesek said, there have been no verified reports of deficiencies of minor fertility elements on irrigated land in the Missouri river bottom in Iowa. Much of Iowa's irrigated land is found in this area. He said that agronomists are keeping their "eyes open" for signs of deficiencies in such elements as zinc, which has been reported in Nebraska. The scalped areas in a leveled field are usually extremely deficient in phosphorus, Mr. Pesek pointed out. (Leveling is often necessary before land is irrigated.)

ATLAS EXECUTIVE DIES

WILMINGTON, DEL.—Kenneth R. Brown, 61, retired vice president of Atlas Powder Co., died March 18 at the Chester County Hospital, West Chester, Pa., following a long illness. Mr. Brown played a key role in the firm's entry into the chemicals field. He retired as vice president and director of Atlas in 1956, after 38 years' service. This term of years spanned nearly the entire history of the company.

Oregon Ragweed Control Program Successful

SALEM, ORE.—Oregon's ragweed control program as measured by reports of field surveys and pollen counts was evidently so effective that it should be presented as an example to other areas with similar problems. This is the opinion of Oren C. Durham, Angwin, Cal., as expressed in a letter to the state department of agriculture.

"Hay Fever Holiday," a publication on allergies, will continue to designate Oregon as one of the best vacation areas for those wishing to escape ragweed, according to Mr. Durham, secretary of the American Academy of Allergy's subcommittee on pollen and mold.

Mr. Durham commended Robert J. Steward, director of the state department of agriculture, and others in the department for carrying out the program so effectively.

Oregon's 1957 legislature made all

western Oregon counties a ragweed control district. George H. Moose is supervisor of the control work for the state department of agriculture.

IMC Appoints New Promotion Supervisor

CHICAGO—International Minerals & Chemical Corp. has appointed Frank H. Gildner, Jr., as agricultural and sales promotion supervisor for its plant food division and potash agricultural department. In his new position Mr. Gildner will specialize in advertising and sales promotion programs for fertilizers, concentrating on the agricultural industry.

Mr. Gildner comes to IMC from General Electric Co., Schenectady, N.Y., where he was an advertising and sales promotion manager for seven years. Previously he worked in the editorial departments of the Schenectady (N.Y.) Gazette, and the Barrington (Ill.) Courier-Review.

TOUGH TICKS

SAN ANTONIO, TEXAS—Insects can survive about 100 times the amount of radiation that human beings and animals can take, according to Lt. Col. Samuel O. Hill, chief of entomology of the 4th army medical laboratory here. He said that of all the land creatures of earth, insects would be the survivors in the event of an atomic radiation disaster. He arrived at this opinion through tagging wood ticks for identification by a radioisotope method and discovered that they can absorb as much as 60,000 roentgens without being killed. It normally takes from only 450 to 600 such units to kill an animal or a human.

His research has also re-emphasized the ability of insects to break down poison molecules to harmless materials and thus become resistant to the action of toxicants.



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PINK BOLLWORM CONTROL

(Continued from page 1)

bacteria were highly destructive to the pest in the laboratory, and an insect-destroying nematode showed enough promise both in laboratory and limited field tests to warrant further study. The next step is to see if these pathogenic organisms can be put to work in cotton fields. The nematode, for example, needs lots of moisture. It might thrive in humid climates or in irrigation ditches. Releasing such natural enemies under favorable weather conditions, or adapting irrigation or other farm operations to favor their survival, might give these organisms enough edge to destroy pink bollworms in vast numbers.

USDA said the search for attractants or repellents for the pest has been disappointing. Nothing yet found entices the insect more than cotton

itself. Eighty-three chemicals were tried in more than 200 tests last year, but none showed any lead or promise. Need for such materials is so great, however, that tests continue with other chemicals.

Fall burial or plow-under of bollworm-infested cotton bolls and trash—the earlier in the fall the better—was found to be the best cultural method of killing the pests in five years of testing in Texas and Oklahoma. Spring plowing-under proved less effective.

Effect of other farm practices on pink-bollworm survival has been explored to a degree, but not far enough yet to be conclusive. For example, cattle and sheep grazed cotton fields enough to cut pink-bollworm numbers, even when pasture, hay and concentrates were available to these ani-

mals. But more must be learned about the danger of poisoning cattle allowed to feed on cotton-plant residues in fields where the growing cotton was intensively treated with insecticides, USDA said.

Basic life processes of the insect are also under intensive study. Analyses of amino acids, sugar, fat, water and over-all weight show differences between non-hibernating and hibernating larvae. Pink bollworms used in these experiments live on potted cotton plants in cabinets where temperature, humidity, and light can be varied to simulate various climates and seasons. Such information may open new approaches to the control problem. For example, if factors influencing hibernation are understood, scientists may be able to prevent bollworms from entering hibernation, and thus cut their chances of surviving the winter.

Since pink bollworms hibernating in the bioclimatic cabinets at Brownsville, Texas, survived conditions simi-

lar to those in widely separated localities, entomologists believe the pest can usually overwinter anywhere in the Cotton Belt. It is now found in parts of Texas, New Mexico, Arizona, Oklahoma, Louisiana and Arkansas.

With the finding last year of several new plant hosts of the pink bollworm, the pest is now known to live from one cotton-crop season to the next on 26 plants besides cotton, and to propagate on 38. Next to cotton it prefers okra. Though alternate host plants do little to increase bollworm numbers, they could defeat an eradication effort if not taken into account.

Potentially the worst of all cotton pests, the pink bollworm was first discovered in the U.S. in 1917, became established in the lower Rio Grande Valley of Texas in 1936, and has steadily moved north and east. Rigid federal and state quarantine and control programs have slowed but not stopped its spread.

Stauffer Boosts Output Of New Herbicide

RICHMOND, CAL.—The new selective herbicide, Eptam (E.P.T.C.) is being moved into larger scale production, it has been announced by Stauffer Chemical Co. During the past year, the company said, Eptam has been made in relatively small pilot plant quantities. Now production is being scaled up in a new and much larger pilot unit so that output will be increased substantially.

This will provide an adequate supply of the herbicide for the expanded field testing and development program the company plans to conduct both nationally and in selected foreign countries, Stauffer said. Eptam, which chemically is ethyl di-n-propylthiocarbamate, was developed by Stauffer's research laboratories in 1955.

Mosquito Conference

OTHELLO, WASH.—A two-day conference opens here April 7 to discuss ways and means of battling the growing mosquito menace in the million-acre Columbia Basin irrigation project. Washington state officials became cognizant of the mosquito menace the last two years when several cases of equine encephalitis were discovered in central Washington. At least two persons died from the disease. Large pothole areas caused by uncontrolled irrigation drainage have become mosquito breeding grounds on the big irrigation project. About 100 sanitarians, entomologists and technicians will get a first-hand look at the area which has developed into the state's major mosquito problem.

CROP ACREAGE

(Continued from page 1)

1958, compared with 73.8 million harvested in 1957 and the 10-year average of 74.2 million; flaxseed, 4,607,000 acres, a decrease of 18% from 1957 and the smallest acreage since 1952 if present planting intentions materialize;

Soybeans, 24 million acres, a tenth larger than last year's record high acreage; peanuts for all purposes, 1,795,000 acres, down slightly from last year but 28% below average; dry beans, 1,544,000 acres, up 5% from 1957 but 6% below average; dry peas, 249,000 acres, a drop of 12% from last year and a fourth below average; sugar beets, 915,000 acres, about the same as last year, but 9% above average;

Tobacco, 1,095,000 acres of all types, 2.4% below last year and the smallest crop since 1908; late summer and fall potatoes, 1,078,000 acres, up 1% from 1957, but 6% below average; sweet-potatoes, 293,600 acres, about 1% above 1957, but 21% below average.



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A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Midwestern states.

Saskatchewan Prepares Grasshopper "Welcome"

Saskatchewan, a Canadian province which has experienced severe infestations of grasshoppers in years past, is prepared for the large numbers of the pests expected to appear this year. An effective counter attack is planned for the hoppers as soon as they appear.

A meeting of more than 145 municipal officials from grasshopper-threatened areas of the province met recently at Regina with representatives of the Saskatchewan department of agriculture, received information to take home to farmers, and also pledged to set up distributing centers for insecticides to control the expected pests.

With the groundwork thus laid, it is unlikely that the province will have an "old fashioned" type of infestation which old timers say were awesome spectacles to behold. By attempting to control the numbers of hatching nymphs, it is hoped this year that the number of adults will be greatly reduced.

A hundred years ago, when such preventive measures were unknown, a heavy infestation of grasshoppers took on the aspect of a plague. Such an event was well described by Henry Yule Hind, a geologist, who in 1858 was exploring Saskatchewan and Assiniboine country. It was in that year that he saw the grasshoppers arrive, and described it as follows:

"On the second of July we observed grasshoppers in full flight towards the north, the air as far as the eye could penetrate appeared to be filled with them. They commenced their flight about nine in the morning and continued until half-past three or four o'clock in the afternoon.

"At times they appeared in such infinite swarms as to lessen perceptibly the light of the sun. The whole horizon wore an unearthly ashen hue from the light reflected by their transparent wings. The air was filled as with flakes of snow and time after time clouds of these insects forming a dense body casting a shimmering silvery light flew swiftly at altitudes varying from 500 to 1,000 feet and upwards."

The pesticide industry may take heart in seeing the determination with which grasshopper infestations are being met in advance of actual need. It is the practice of getting supplies of pesticides on hand early that is helpful to the trade and also is more effective in the holding down of infestations.

Pesticide Trade Faces Opponents Successfully

The pesticide trade should be encouraged by the quality of information put forth by representatives of the National Agricultural Chemicals Assn. in a recent discussion in New York, sponsored by the Garden Clubs of America. Speaking out for the industry was Donald L. Miller of the NAC staff, who emphasized that pesticide makers spend some \$20 million a year in safety research, and that despite the ideas of many city gardeners and bird-lovers to the contrary, the industry is very much concerned with the safe use of its products.

Mr. Miller, speaking before an audience representing groups loudly opposed to pesticidal application in general, did a commendable job, we think. Backed by USDA spokesmen who not only confirmed his statements indicating that some of the finest and most reliable companies in America are making pesticidal products, but that farmers and agriculture in general are benefited by the use of pesticidal chemicals.

Opposing the viewpoints of both USDA and the pesticide industry was Robert Cushman Murphy, honorary president of the Audubon Society and a member of the staff of the New York Museum of Natural His-

tory. Mr. Murphy has been an outspoken critic of the eradication programs of both the gypsy moth and the fire ant, declaring that the damage done by pesticides will be far-reaching and costly to birds, fish and wildlife.

The industry faces a difficult task in trying to break through the prejudice and emotional appeal which comprise much of the scare-type arguments trotted out against the use of pesticides. Mr. Murphy spoke of "trigger-happy commercial pilots" who spray pesticides haphazardly beyond the areas designated for treatment, and referred to "biological deserts" created on Long Island as a result of last summer's spraying operations there.

Organic farmers complained that because of the insecticidal spray, produce from their acres can no longer be claimed to be "pure," having been desecrated by the presence of pesticides.

Other speakers opposing pesticides indicated that scientists are not always correct, and reminded that some doctors have warned against the adverse effects of toxicants. The instance of Maryland quail was cited as a frightening example. The quail ingested some DDT, one speaker said, and although there were few ill effects on the mature quail themselves, the offspring either died or were crippled, and there was no third generation. The speaker added, "this frightens me, and I hope it frightens you."

With this type of opposition, the NAC spokesman did well to score a number of good points difficult for the foe to counter. The fact that the pesticide industry is fully cognizant of its responsibilities; that it allocates a large portion of its production budget to safety research; that it operates under the strict provisions of state and federal laws; and that every precaution is taken to avoid harm to crops, livestock and public health, presents such a strong positive argument that thinking people should be deeply impressed.

The industry argument, augmented by testimony from highly-regarded experts from the U.S. Department of Agriculture is one that should be told over and over by people in the trade to customers and friends on the outside. Too many of these are being taken in by the scare stories which make bigger headlines than do the more prosaic straight scientific facts.

Soybean Nematodes a Threat

"The American Soybean Association regards the soybean cyst nematode as a very serious and major threat to economic soybean production in the United States. We feel it is imperative that every state, where soybeans are grown, act immediately to determine whether or not there is infestation in that state, and the extent of it. Survey work must be completed in 1958 so we may know what we have to fight against . . .

"It is our belief that proper survey work and control measures instituted now can prevent the soybean cyst nematode from becoming a major pest. If we do not act wisely and quickly, we may find the soybean crop going the way of some other crops on which major pests have developed."—George M. Strayer, executive vice president and secretary-treasurer, American Soybean Assn.

Quote

"In the Middle West, we have built a highly productive agriculture based on mining our soil for nitrogen. Legumes have tended to delay this day of nitrogen starvation. The toll in depleting our soils in phosphorus and potassium, and perhaps other mineral elements is great. Therefore, as our agriculture grows older, we no longer depend on inherited nitrogen from organic matter. In many places, too, it will not be economical to depend on nitrogen from legume sources."—George D. Scarseth, Director of Research, American Farm Research Assn., Lafayette, Ind.



Croplife's Home Office

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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is \$5 for one year (\$8 a year outside the U.S.). Single copy price, 25¢.

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Managing Editor

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Published by
THE MILLER PUBLISHING CO.
2501 Wayzata Blvd., Minneapolis, Minn.
(Address Mail to P. O. Box 67, Minneapolis 1, Minn.)



Associated Publications — The Northwestern Miller, The American Baker, Farm Store Merchandising, Feedstuffs, Milling Production.

MEETING MEMOS

June 4—Executive Committee, Fertilizer Safety Section, National Safety Council, Hotel Roanoke, Roanoke, Va. Time: 9 a.m.

Aug. 20-24—Canada Fertilizer Assn. (formerly Plant Food Producers of Eastern Canada), Annual Meeting, Manoir Richelieu, Murray Bay, Quebec.

Sept. 4—Grassland Field Day, Rutgers University Dairy Research Farm, Beemerville, N.J.

Dec. 17-18—Beltwide Cotton Production Conference, Rice Hotel, Houston, Texas, sponsored by the National Cotton Council.

EDITOR'S NOTE: The listings above are appearing in the Meeting Memos for the first time this week.

April 13-15—Sixth Annual California Fertilizer Conference, California State Polytechnic College, San Luis Obispo, Sidney H. Bierly, 475 Huntington Drive, San Marino 9, Cal., General Manager.

April 17-19—California Hay, Grain & Feed Dealers Assn. Annual Convention, Ambassador Hotel, Los Angeles.

April 22—Western Agricultural Chemicals Assn., Spring Meeting, Hotel Biltmore, Los Angeles; C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., executive secretary.

April 30—Manufacturing Chemists' Assn. Precautionary Labeling Conference, Shamrock Hotel, Houston, Texas.

May 22-23—Soil Science Society of North Carolina, First Annual Meeting, Williams Hall, North Carolina State College, Raleigh, N.C.

June 9-11—Association of Southern Feed & Fertilizer Control Officials, Heart of Atlanta Motel, Atlanta, Ga., Bruce Poundstone, University of Kentucky, Lexington, Ky., Secretary-Treasurer.

June 12-14—Manufacturing Chemists' Assn., 86th Annual Meeting, The Greenbrier, White Sulphur Springs, W. Va.

June 15-18—National Plant Food Institute, Annual Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 25-27—Pacific Branch, Entomological Society of America, San Diego, Cal.

July 8-10—Pacific Northwest Plant Food Assn., Ninth Annual Regional Fertilizer Conference, Pocatello, Idaho.

July 18-19—Southwest Fertilizer Conference and Grade Hearing, Buccaneer Hotel, Galveston, Texas.

Oct. 14-15—Western Agricultural Chemicals Assn., Annual Meeting,

Villa Hotel, San Mateo, Cal., C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., Executive Secretary.

Oct. 20—Annual Sales Clinic of Salesmen's Assn. of the American Chemical Industry, Inc., Roosevelt Hotel, New York.

Oct. 20-21—Fertilizer Section, National Safety Council, annual fall meeting, La Salle Hotel, Chicago, Ill.

Oct. 22-24—Pacific Northwest Plant Food Assn., Annual Meeting, Gearhart, Ore., Leon S. Jackson, P.O. Box 4623, Sellwood-Moreland Station, Portland, Ore., secretary.

Oct. 28-29—Northwest Garden Supply Trade Show, Masonic Temple, Portland, Ore.

Oct. 29-31—National Agricultural Chemicals Assn., 25th annual meeting, Bon Air Hotel, Augusta, Ga.

Nov. 9-11—California Fertilizer Assn., 35th Annual Convention, Ambassador Hotel, Los Angeles, Sidney H. Bierly, 475 Huntington Drive, San Marino 9, Cal., General Manager.

Dec. 3-5—Agricultural Ammonia Institute, Annual Meeting, Morrison Hotel, Chicago, Jack F. Criswell, Claridge Hotel, Memphis, Executive Vice President.

Jan. 20-22, 1959—California Weed Conference, Santa Barbara, Cal.

Oklahoma Tallies Plant Food Tonnages

OKLAHOMA CITY, OKLA.—A total of 10,257 tons of fertilizer was tallied in the months of January and February, 1958, the state has announced. January's total was 4,110 tons; February's 6,147 tons.

The 10-20-10 grade of mixed fertilizer was the heaviest seller during both months, tallying 602 and 1,182 tons respectively for January and February. Second in tonnage was 5-10-5 with 550 and 1,127 tons respectively.

Among the fertilizer materials, normal superphosphate, ammonium nitrate and ammonium phosphate were most popular for both months. Superphosphate recorded 582 and 817 tons respectively for January and February; ammonium nitrate 550 and 460 tons; and ammonium phosphate 153 and 149 tons.

Cotton Conference

MEMPHIS—The Beltwide Cotton Production Conference will be held at the Rice Hotel in Houston Dec. 17-18, instead of Dec. 18-19, as previously announced. The production conference will be preceded by a meeting of federal-state entomologists on cotton insect control, Dec. 14-16; a joint meeting of the Cotton Improvement Conference and Cotton Disease Council, Dec. 15-16; and the Defoliation Conference, Dec. 16.

CALENDAR FOR 1958-59

MARCH							APRIL							MAY							JUNE							
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Bob Gawtry

Bill Hope

DOUGLAS APPOINTMENTS—Bob Gawtry and Bill Hope have been appointed district managers for Douglas Chemical Co., Kansas City, according to D. G. Farmer, director of sales and advertising for the company. Mr. Gawtry's district responsibilities will cover eastern Iowa and Wisconsin, and Mr. Hope's in eastern Kansas. Both appointees have had wide experience in the agricultural field. Mr. Gawtry has been in the grain sanitation business for a number of years, and Mr. Hope spent seven years as a district manager for the John Deere Plow Co.

IMC Hits Production Milestone at Carlsbad

CARLSBAD, N.M.—The International Minerals and Chemical Corp. potash mine here celebrated another milestone recently with the mining of the company's 40-millionth ton of potash ore. International has been operating here since October, 1940.

More than 30-million tons of the Carlsbad production has been from the sylvite ore bed which is common to all potash mines in this area. Sylvite ore contains potassium chloride and occurs at about 900 feet below the surface. International's operations here also include the mining of another potash-bearing ore—langbeinite—which occurs about 800 to 850 feet below the surface.

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Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge \$2.25. Situations wanted, 10¢ a word; \$1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of \$11 per column inch. All Want Ads cash with order.

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GRADUATE ENTOMOLOGIST WITH 12 years' experience in marketing and developmental work in herbicides, insecticides and consumer (garden products). Good. Wishes to make a change due to employer entrenchment. Resume upon request. Address Ad. No. 3616, Croplife, Minneapolis 1, Minn.

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CLASSIFIED ADVERTISING

Fertilizer Plant Planned for Iran

TEHERAN—The Chamber of Commerce of Kermanshah, a provincial capital in western Iran, has announced plans to erect a fertilizer plant to be financed from government oil funds.

The plant will have capacity of 100-200 metric tons a day. It is planned to design it for production of nitrogen fertilizer, making use of natural gas from the Kermanshah oil fields.

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CROPLIFE's spot diagnosis of the shifting agricultural chemical scene represents a powerful influence on this 2 billion dollar market . . .



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NATIONAL COVERAGE WEEKLY . . .

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